

Winter 1988

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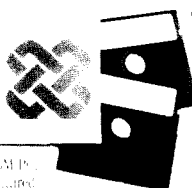
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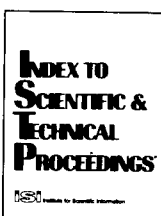
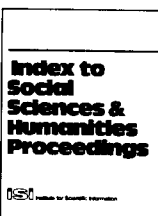
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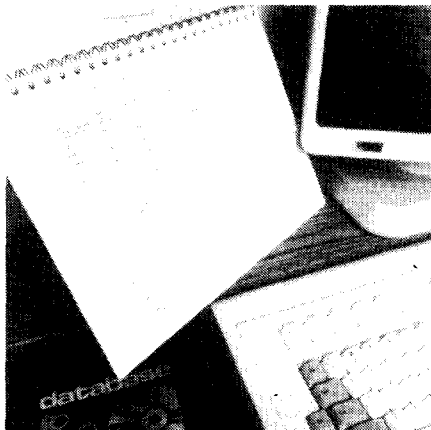
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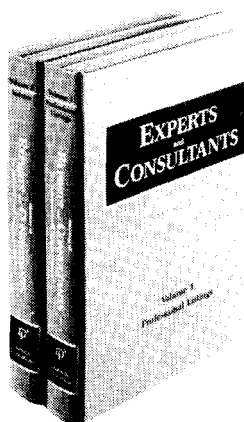
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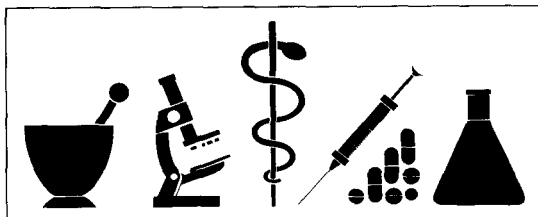
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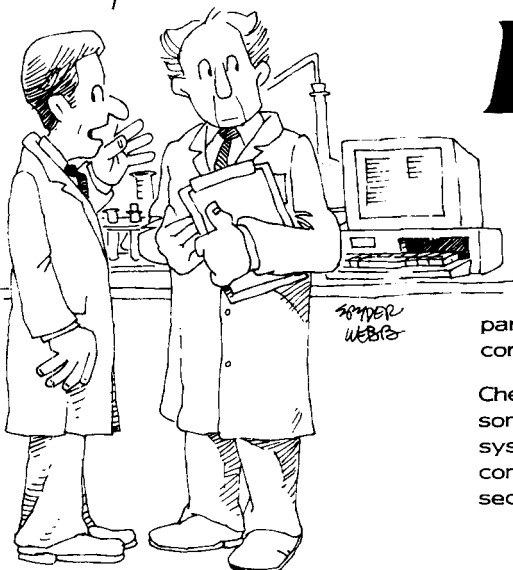
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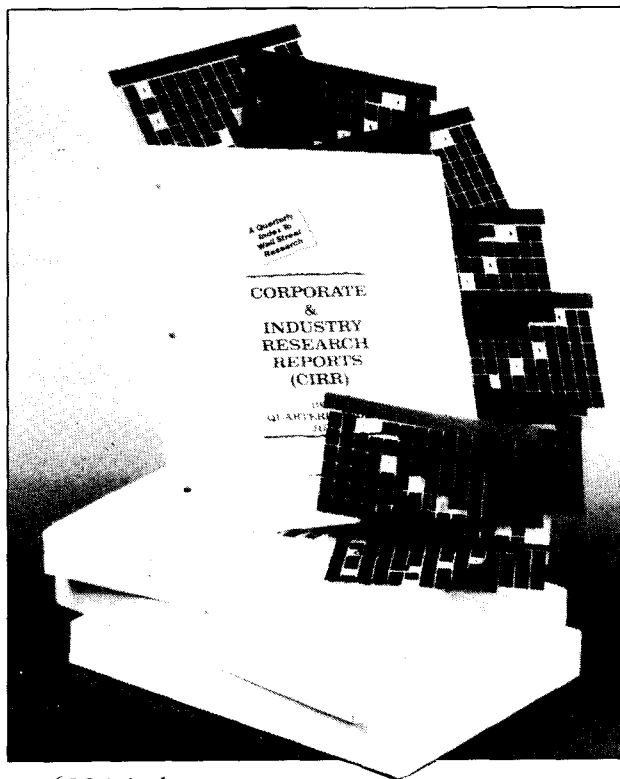
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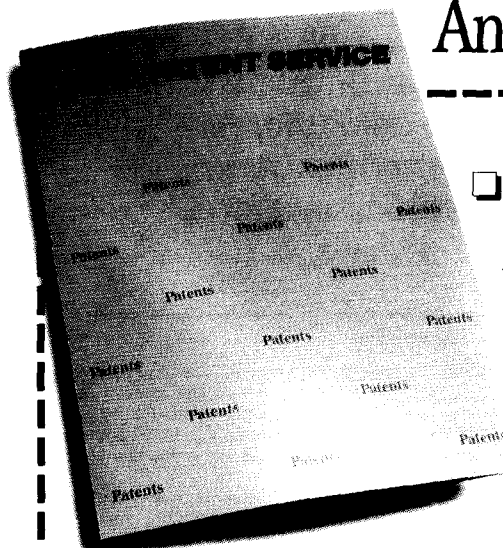
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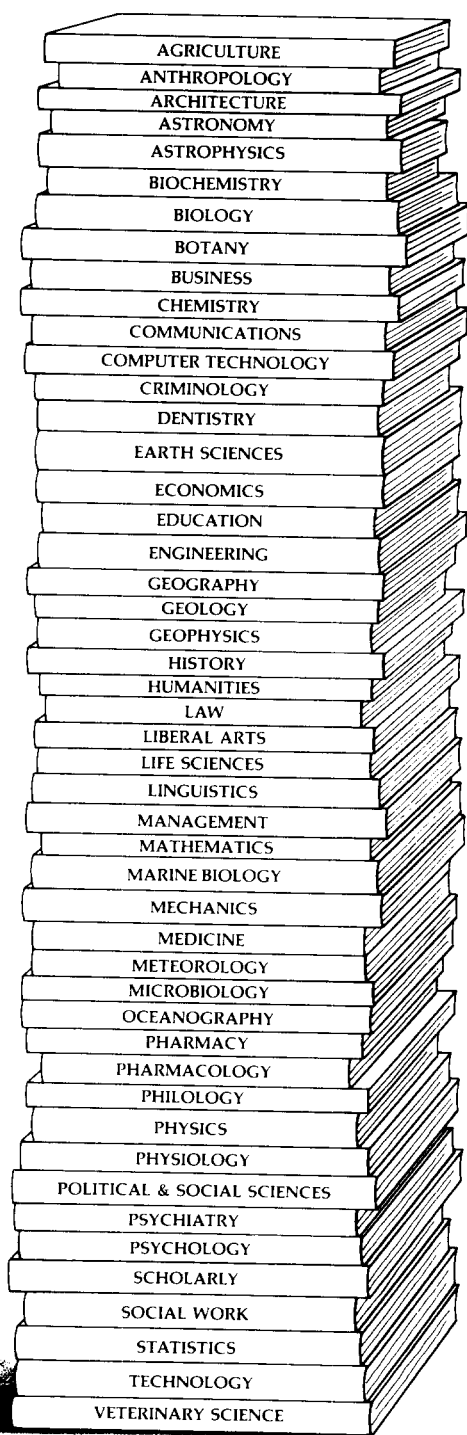
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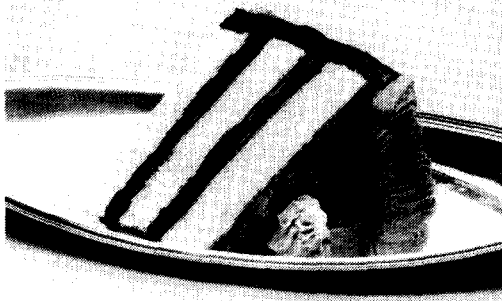
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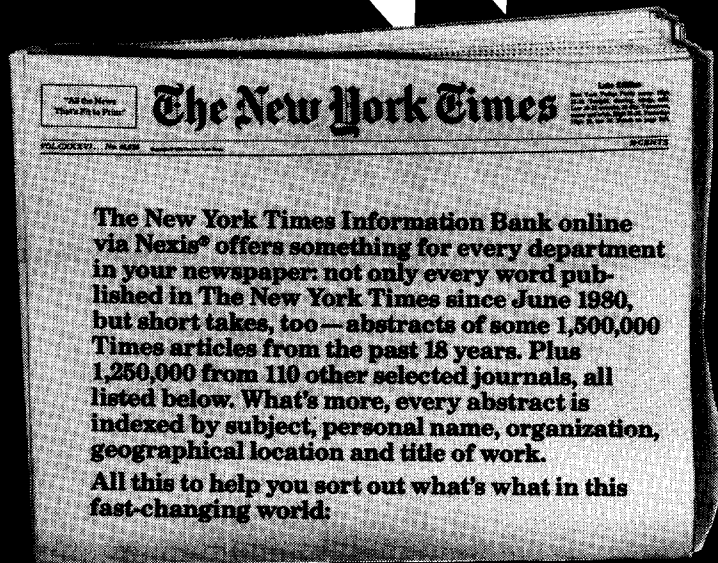
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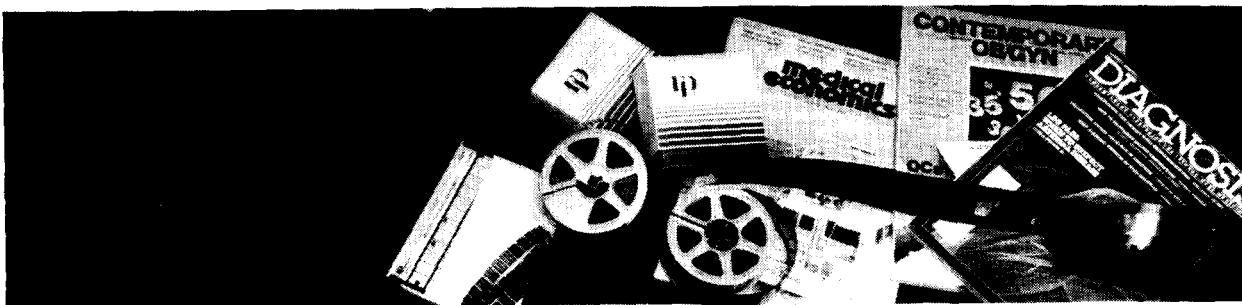
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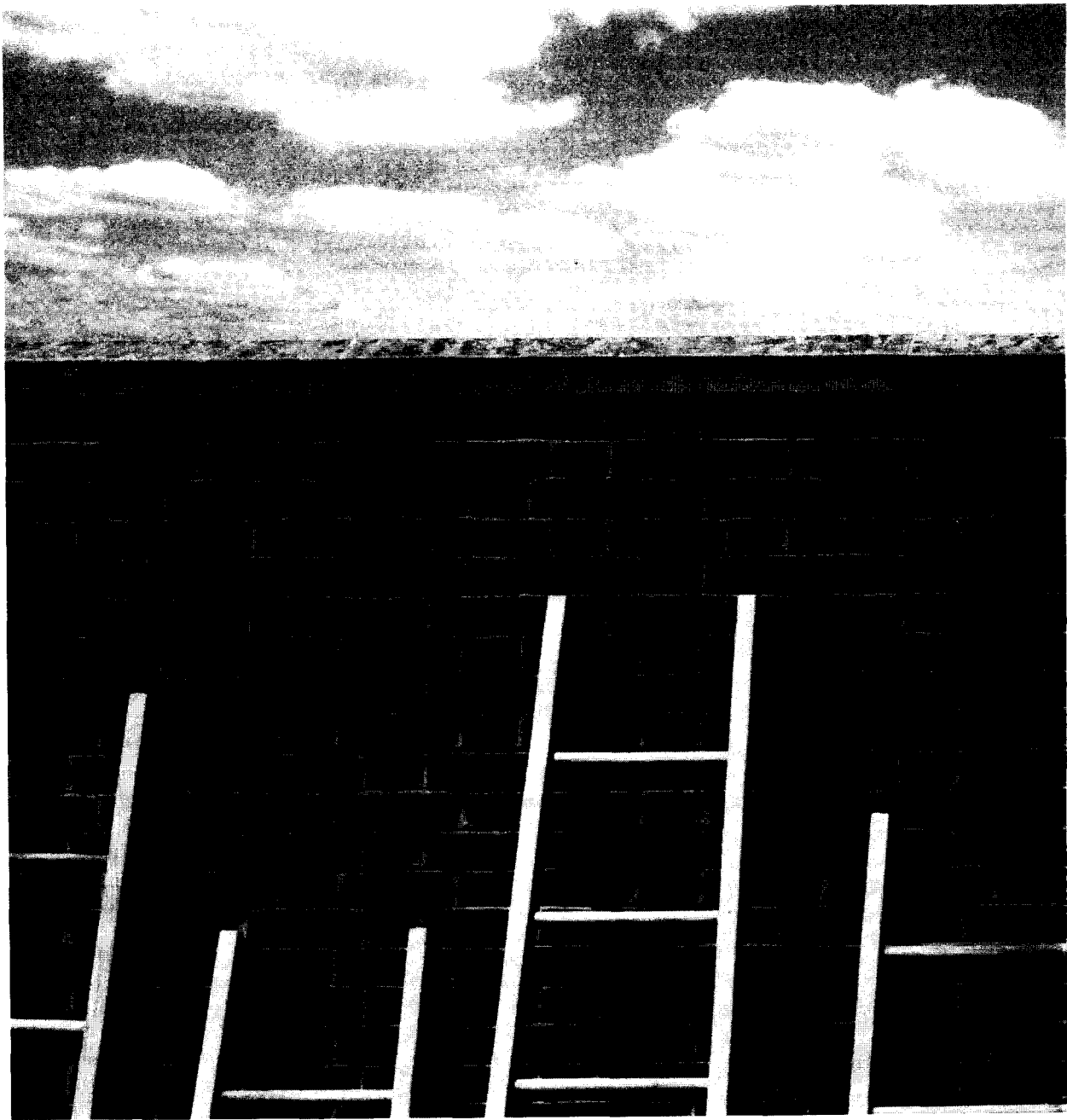


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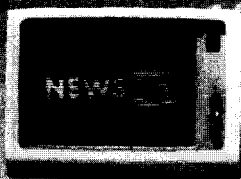


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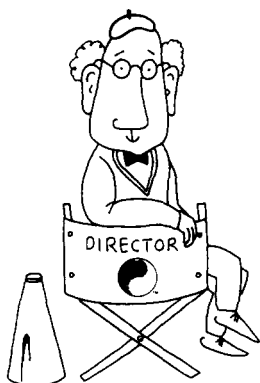
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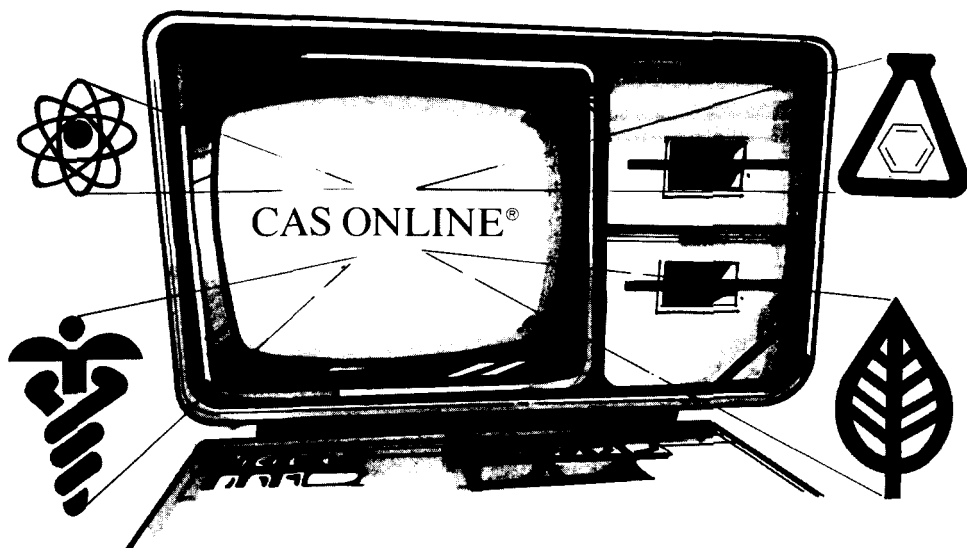
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The Role of Intergovernmental Organizations in International Information Transfer and Policy

Robert V. Williams

■ The increasing complexity of the issues involved in the international free flow of information has had serious effects on the roles that intergovernmental organizations (IGOs) have traditionally played in this area. This paper examines the roles of IGOs (with a focus on UNESCO) in the development of international information policy initiatives and international information transfer systems within the last 40 years. It concludes that even though very little progress has been made on international information policy issues, significant gains have taken place in the development of information transfer systems. Specific recommendations are made for continuing work in this area.

N OBEL laureate Kenneth Arrow once asked: "If one nation or class has the knowledge which enables it to achieve higher productivity, why are not the others acquiring that information." (1) There is, obviously, no simple answer to this question. And, as the world grows increasingly complex and information becomes a more valuable commodity, answers to his question take on new dimensions and become even more controversial than when he originally posed it in 1969.

The purpose of this paper is to address part—and I want to emphasize that it is

a small part—of the issue posed by Arrow. Specifically, I will examine the roles played by international intergovernmental organizations (IGOs) over the last 40 years in the development of information transfer mechanisms and attempts to develop international information policy. Within this larger context, I will then consider the extent to which efforts in these two areas, information transfer and information policy, have considered and been influenced by the needs and contributions of special librarians around the world. This is a semi-historical critique and a review of current trends in these

areas. I will conclude with some recommendations as to how special librarians may play more vital roles in this increasingly important arena.

IGOs have been in existence for well over 100 years. During that time they have been influential in a variety of international affairs, ranging from peace keeping to preservation of antiquities. These organizations, as official bodies representing national member governments, have had both glowing successes and dismal failures. The range and variety of IGOs did not develop until after World War II with the formation of the United Nations and the affiliated specialized agencies. Since the late 1940s, there has been a blossoming of these organizations into a wide variety of types, sizes, and interest areas. Today, there are well over 500 individual IGOs, many of which have large subsidiary bodies with responsibility for specific geographical regions. (2)

Until recently, information-related issues have been of concern to only a few of these organizations. However, during the 1970s, as it became increasingly obvious that information was a valuable commodity and as international information transfer became more easily accomplished through sophisticated technology, these organizations began to take a keener interest in these issues. At the same time, the issues themselves became more complex. First, national governments of the developed world, interested in the protection of their own information, were posed against the concerns of the governments of lesser developed nations for a sharing of information for development. At the same time, the developing nations feared that their own nascent information industries, particularly the communications media, would be overwhelmed by the large multinational corporations (MNCs) of the developed nations. Mixed in with these concerns were the issues of privacy, censorship, copyright and patent protection, standards, and, most importantly, the free flow of information for scientific progress and the growth of democracy.

Despite the complexity of the issues involved, it appears possible to dichotomize them into two logical components: information transfer and information policy. Here, international information transfer will be defined as the processes and systems that promote the flow of information from the creating nation or organization to other nations or organizations. It will particularly include the issue of transborder data flow (TDF), which is probably the central issue in current discussions of international information problems. International information policy will be defined as those efforts by national governments and intergovernmental organizations to develop official policy or law for the transmission and receipt of information from outside national borders. It will become obvious very quickly that there have been far greater successes in dealing with problems of information transfer than with those relating to international information policy.

The Leadership of UNESCO

Even though the international transfer of information—primarily in the form of exchange agreements between libraries and scientific societies—has been a long-term phenomenon, the establishment of UNESCO in 1945 and the creation within it of a libraries program was to have a significant effect on international activities in this area. Through the development of programs for popular libraries, training of librarians for the developing countries, bibliographic control, establishment of library demonstration projects as part of educational programs, and, particularly, an emphatic stress on the importance of national library planning, UNESCO gave significant and long-term leadership in the area of international cooperation. Utilizing close ties with the two major international library associations, the International Federation of Library Associations (IFLA) and the International Federation for Documentation (FID), UNESCO had a significant effect

on the development of an international library community. The work of UNESCO during the period 1945 to 1980 centered on the development of a national library and information infrastructure within nations (with work being focused on the lesser developed nations) that would, when brought together in a unified system, constitute a worldwide bibliographical system that could be easily exchanged and shared to the profit of all. During these years, UNESCO supported over 700 missions to the developing nations to support a variety of technical assistance, educational, and planning efforts. (3)

As conceived by UNESCO in the late 1960s, this National Information System (NATIS) program emphasized the development of national library, archives, and documentation systems that could be integrated into one worldwide bibliographic and information system. Each nation would construct its own plans for bibliographical control, standards, manpower requirements, and national information policy. These plans would then be shared and coordinated with other nations in, first, regional and, eventually, in worldwide efforts. UNESCO sponsored a series of regional conferences, with the cooperation of the regional intergovernmental organizations, to foster these ideas and plans. The plan was an ambitious one. It would, at its best, lead to a long-term dream of librarians: Universal Bibliographic Control (UBC).

The NATIS program was—and, to some extent, still is—UNESCO's most systematic plan for the development of a worldwide information system. Many factors, however, would work against successful implementation. An immediate problem was the structure of the library/information program within UNESCO itself. Originally created as a part of the Department of Cultural Affairs, issues related to the development of scientific and technical information and mass communications media were not integrated with the library and bibliographical issues. A reorganization in 1967, creating a separate division of Doc-

umentation, Libraries and Archives, was of some assistance in joint progress on library development and scientific and technical information, but separate programs for the two were maintained until 1977 when the General Information Program (PGI) was created.

Efforts by UNESCO to establish leadership in the area of scientific and technical information began in the late 1960s, but were under the auspices of the Science Sector of UNESCO and not the library programs section. This meant that, from the beginning, scientific documentation and library planning issues were separated within UNESCO and, as time passed, increasingly competitive for scarce resources. The UNISIST I conference in 1971, planned in cooperation with the International Council of Scientific Unions, was an effort to begin the construction of an international information system in this area. Regional conferences to promote and expand the idea resulted in the decision to focus on the building of a worldwide system of scientific and technical information for development. The UNISIST II conference of 1979 solidified this approach and established the necessity of developing national and international information policy to aid the building of systems that would lead to the flow of appropriate information and technology to the developing nations.

The combining of the UNISIST and NATIS programs into PGI of UNESCO in 1977 gave hopes that the two formerly competing programs would now receive equal and integrated attention. This was—and still is—the intent of UNESCO. Significant events, however, have intervened that make the realization of dreams such as UBC and a worldwide science information system much more difficult to accomplish than in earlier years. Foremost among these have been events fostered by UNESCO for the development of national and international information and communication policies. As a result of these efforts, UNESCO has come under increasing attack by the developed nations for “selling out” to the lesser developed nations and the Soviet

bloc countries, and, according to its critics, stifling the free flow of information. The U.S. government, under President Reagan, has been one of the chief critics. In 1984, the U.S. withdrew from membership in UNESCO because of the perceived lack of responsiveness to these complaints. Other nations have also withdrawn and some have reduced contributions. The overall effect has been a severe curtailment of efforts in all of these vital areas. Progress through UNESCO on information transfer and information policy now look very bleak.

The Development Issue: Dependence, Independence, and Interdependence

Any understanding of the current lack of progress on these issues is predicated on an understanding of the larger world of economic development and development theory. Modernization theory was the first significant proposal for addressing the needs of poor countries. Developed in the 1950s, the general concept was that as the poor nations of the world developed their economies they would become "modern," and benefits would begin to trickle down even to the poorest in the country. These countries would also develop modern communications and information systems, and be able to both create and receive the world's knowledge. By the 1960s, it had become evident that modernization theory was not working as presumed and, indeed, the poor nations were becoming even poorer. More importantly, even in countries where economic growth was respectable, social and educational developments were likely to lag far behind, and income redistribution within nations was frequently worse than before. From the viewpoint of these nations, it was clear that a patron/client relationship was clearly the case between the poor and rich nations. This "dependency theory" led to aggressive political action within the United Nations by these countries, and they demanded, through such infor-

mal organizations as the "Group of 77," significant changes in what was perceived as economic and cultural imperialism. Specifically, there was a demand for a New International Economic Order (NIEO) that would recognize and redress this inherently unjust international system. (4) Most of the proposals were economic in nature, such as lower credit rates and support prices for raw materials, but integral to the NIEO was the conclusion that a different approach had to be taken on the development of communications and information systems.

Thus, the New World Information and Communications Order (NWICO) concept came to dominate the debate in the areas of communications and information policy. Essentially, the NWICO called for the same kind of drastic restructuring of information and communications systems as NIEO had for economic systems. Observing that the developed nations controlled the international news and communications systems, and were the possessors of valuable scientific and technical information needed for development, the lesser developed nations called for equity and reciprocity. A variety of issues are involved in the call for NWICO, and, while they have mostly been aired in the context of UNESCO meetings, they also relate directly to the work of many other IGOs, such as the International Telecommunications Union (ITU), the Intergovernmental Bureau for Informatics (IBI), the Organization for Economic Cooperation and Development (OECD), and many others. Central to the call for NWICO are three interrelated issues: changes in control of the worldwide telecommunications network by the developed nations, an insistence on sovereignty and internal control over the content and flow of information within the nation, and availability of appropriate information and technology for development. (5) Suprenant's recent summary of these trends and issues is appropriately titled "Global Threats to Information." (6) The threats, however, are two-sided ones. The lesser developed nations feel that there must be a drastic restructuring

of the communications and information systems in their favor. The developed nations, principally led by the transnational corporations that own the systems, have reacted very negatively to these issues, seeing them as attempts to license, control, or restrict the free flow of information.

Thus, in a very real sense, we have a stalemate on international information policy and no clear indications as to how we might resolve these complex issues. The response of the U.S., particularly from the current administration, has been one that is passive or, as in the case of our withdrawal from UNESCO, reactionary. Some have suggested that one possible way out of the dilemma is the development of our own national information policy, as a number of other nations have already done. The hope is that this would give direction as to how we might proceed in helping develop an international information policy. (7) At this time, however, there is little indication of progress in that direction.

The Rise of International Information Systems

That there is a stalemate on international information policy cannot be questioned. Equally certain, however, is the increasing growth and influence of international information systems that aid in the transfer of information. Many of these systems are commercial ones, operated by both old and new companies of the now worldwide information economy. More striking and perhaps more important to eventual resolution of international information policy issues is the development of the information systems of the IGOs. It is my view that these organizations present us with an excellent opportunity for continued effectiveness in international information transfer and a possible avenue for the resolution of policy issues.

Information systems of IGOs are not, of course, a new development. They have been around a long time, dating back at

least to the Pan American Union and, later, the League of Nations. What is new is the increasing variety and sophistication of these networks. Perhaps even more important, however, is the cooperative nature of these networks and the hope that they portend for increased mutual sharing between developed and developing nations. A 1980 study of the information systems in the U.N. family of IGOs (a total of about 15 separate organizations) showed that there were over 200 independent systems. (8) No systematic study of the information systems of the other IGOs has been made, but my beginning study of them shows that there are at least another 200 significant ones scattered among these non-U.N.-related organizations. (9) These systems include libraries, bibliographical services, databases, clearinghouses, referral centers, and information analysis centers.

Because these systems have been created by IGOs, most of which have developed and developing nations as members, they have been very responsive to a variety of different national problems. As Neelameghan and Tocatlán have pointed out, these systems also have greater legitimacy with the developing nations because of their formation under the auspices of the U.N. (10) These systems promise to have great influence on the development of information transfer and policy by giving decision makers access to high-quality information not otherwise affordable, by compensation to the poor nations who lack the resources and infrastructure to develop their own systems, and by structuring the information needed by these nations in terms that are specific to the language and culture of the nations.

The information systems of IGOs vary in quality, but the best are as good as any that have been created by private or public organizations in the developed world. Such systems as INIS of the International Atomic Energy Agency, AGRIS of the Food and Agriculture Organization, INFOTERRA of the U.N. Environment Programme, and World

Weather Watch of the World Meteorological Organization are shining examples of this cooperation at work. They are based on international decentralized networks for input and output—networks that are located in both developed and developing nations. Through these model systems, significant information transfer is taking place, and there is great potential for even further progress. At the 1982 U.N. Conference on Science and Technology for Development, plans were laid for the formation of a Global Information Network for Scientific and Technological Information. The Global Information Network concept is aimed at: strengthening existing information systems, specialized training of personnel, development of standards and tools for information handling, and improvement of the information and communications technology for support of the network. (11) At the present time, it is more of an idea than a reality; but, with the cooperation and assistance of both developed and developing nations, it has great promise.

Conclusions and Recommendations: The International World of the Special Librarian

The fact that the world of information services has changed dramatically since 1945 no longer surprises any of us. What is surprising is the fact that we have made so little progress in the development of information policy for the equitable creation and sharing of the vast information resources available to us. Our information transfer systems are now sophisticated and powerful, thanks to technological development and dedicated information workers, but we now face the likelihood that these systems will be thwarted by our inability to come to grips with the political, economic, ideological, and equalitarian issues that face us at the present time.

It is my view that the intergovernmental organizations—with the help of nongovernmental organizations—offer the best hope for continued development of superior information transfer systems *and* for the equitable resolution of information policy issues. To this end, special librarians worldwide—but particularly those of the U.S. and Canada—have significant roles to play in future events related to international information transfer and policy. This was largely not the case in earlier years when the predominant emphasis (particularly within UNESCO) was on literacy programs, popular libraries, and cataloging rules. The multimillion dollar world of transborder data flow, the development of international business and science information systems, and, particularly, our increasingly interdependent world have made it essential that we take a more active role.

Fortunately, special librarians have already taken active leadership in some of these areas. Our colleagues in spirit—if not yet in membership—in the libraries and information centers of the IGOs have played a vital role in the development of the model information systems of AGRIS, INIS, and others. The development of online databases, specialized information services, and cooperative networks are evidence of their impact.

Within our professional associations, we must now begin to take more than a passing interest in these issues. We need to consider action on at least the following kinds of activities:

1. Appointment of standing committees on international relations. For each association, this committee should include any representatives to IFLA, FID, the UNESCO PGI observer, and at least five persons from a general membership. The committee should establish liaison with similar committees from other associations that represent the interests of special librarians and information managers;

2. Increased participation and involvement by association representatives to IFLA and FID in the affairs of these organizations. Associations should assist the representatives financially in attending all meetings of these organizations;
3. The establishment by the professional associations of observer status with other IGOs working actively in the areas of international information transfer and policy, such as ITU, IBI, WIPO, ISO, FAO, and the UN itself;
4. Begin efforts to recruit the librarians and information managers of the information systems within the IGOs to membership in national and international professional associations. Membership should be offered at a significant discount to information specialists in IGOs located in the lesser developed nations;
5. Continue and intensify efforts within the U.S. for the development of a national information policy that recognizes the legitimate needs of the U.S. and the lesser developed nations and promotes an equitable distribution of information resources worldwide.

When Kenneth Arrow posed his question about the inequitable distribution of knowledge across nations in 1969, he also partially answered it by noting that both economic and interpersonal factors have a great deal to do with the problem. Technological knowledge, he said, was both the result as well as the cause of economic change. The effective transmission of this knowledge, while partially dependent on the development of expensive international systems, is ultimately most affected by interpersonal contacts between those already possessing and using the knowledge and those that need the knowledge. Because of the expense involved in international interpersonal contacts, they are naturally much less common than within nation

contacts. Technology, however, is rapidly lowering the costs of these kinds of contacts and we must be ready to use them to the mutual advantage of special librarians around the world. Through greater cooperation and participation in the affairs of the international organizations, particularly the IGOs, we can break down the barriers that have led to the current state that some have called an "information war." Even more important, however, is the need for each of us, as dedicated information professionals, to increase our awareness of international information issues and our involvement with special librarians worldwide.

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Robert V. Williams is an associate professor at the College of Library and Information Science, University of South Carolina, in Columbia, South Carolina.

Packet Switching Networks: Worldwide Access to Corporate Datafiles

Kurt O. Baumgartner

■ Large corporations are continually faced with the problems of the availability of corporate information, data, and computing facilities to their various locations, both domestic and overseas. Traditionally, corporations have either split their information and computing centers, tied into a central location with standard long distance lines, or have leased dedicated long distance lines. The availability of packet switching systems or public data communications networks allows corporations another choice—one which may be better, more dependable, and less costly than the other options.

ONE of the major problems that face many corporations and academic institutions is how to efficiently allow peripheral locations access to centrally located computer files. In addition to library datafiles or library forms, outside locations may need access to accounting files, personnel records, reports, or software packages. The most common solution to this problem has been the installation of dial-access ports to the main computer. The problems that have arisen with this involve the use of long distance, direct dial, public access telephone lines. In addition to the extremely high usage cost is the problem of high line noise, which often makes the system impossible to use. Many corporations began installing dedicated lines between two or more locations. The initial cost was quite high,

but line noise was reduced as was connect cost. However, if the line went down, no one had access from the outside until the line was repaired. Unlike public lines, the call is not rerouted if a dedicated line goes down. A solution to the high costs, line noise, and downtime can be in connecting to and becoming a host node on a packet switching data communications network.

Packet Switching Networks

A packet switching network, also called a public data communications network, is unique in that it can serve both terminal access and host connections. Terminal connection is accomplished primarily through standard phone lines using a public dial-in service. However, pri-

vate dial-in or dial-out connections are available to users with a large amount of connect time needs. Host connections are through dedicated access facilities (DAFs). These not only connect a host computer to the system but allow for synchronous and asynchronous terminal connections. The advantage of the packet switching network is to allow for multiple users to share transmission and host facilities.

The network functions quite simply. Each host computer is connected to the network at a switching center via a trunkline. These switching centers are located in all of the major U.S. cities and many secondary and tertiary cities as well (figure 1). In addition to the trunklines connecting the host to the center, multiple trunklines connect adjacent centers. These are high speed lines with the transmission rate between centers at 56 Kbps. The transmission rate between the host computer and the center will vary depending on the perceived usage, number of users, local telephone systems, etc. Terminal access to the network though will vary from 300 to 9,600 bps depending on the terminal, modem, software, and type of connection.

The way that the information is transferred and handled by the network is also quite simple (figure 2). Information is passed from one center to the next via 'packets'. Each packet contains up to 126 bytes of information. These packets are passed from the originating source through these switching centers until the packet reaches its destination. This destination or source could be either a terminal or host computer. Each packet is transmitted between centers in burst transmissions. To avoid loss of data, the sending center buffers the packet until the sender receives a check message from the receiving center that the receiver actually received the packet. If the connection is broken, or a line goes down and no message is received, the sending center reroutes the packet through another center. This error checking and switching is transparent to the users. Each center will also contain redundant

switches in case of switch failure. This, coupled with the multiple trunk lines, considerably reduces the likelihood of network outages resulting in downtime.

Services

There are two types of service with the public data communications network: the first as a user, the second as a host. User access may be more common, but host access may benefit the corporation more.

User. To be a user of a public data communications network (PDCN) has only one criterion. The user needs access to a host computer that is a node on that particular network. Libraries have had this need for several years and are major users of the PDCNs. All of the major database vendors (DIALOG, BRS, ORBIT, etc.) are host nodes on one or more of these networks. The only requirements to be a user are a terminal, phone, and a modem capable of at least a 300 baud rate. In most cases, a local call will connect the user to the network. No sign-up fee is needed and all connect time billing is done by the vendor.

Host. Becoming a host node on one of the networks has greater usage potentials for multinational corporations. There are several reasons why a corporation would consider this method of data communications:

1. The corporation has a large centrally located computer center. Access to this center is needed by several branch locations, subsidiaries, and foreign offices.
2. The corporation utilizes high cost, direct dial-in ports.
3. The corporation is developing or contracting for high cost, high maintenance dedicated lines from specific locations to the center.
4. The corporation has very high access charges for user access to the network.

The first three of these reasons are highly interrelated. Many corporations

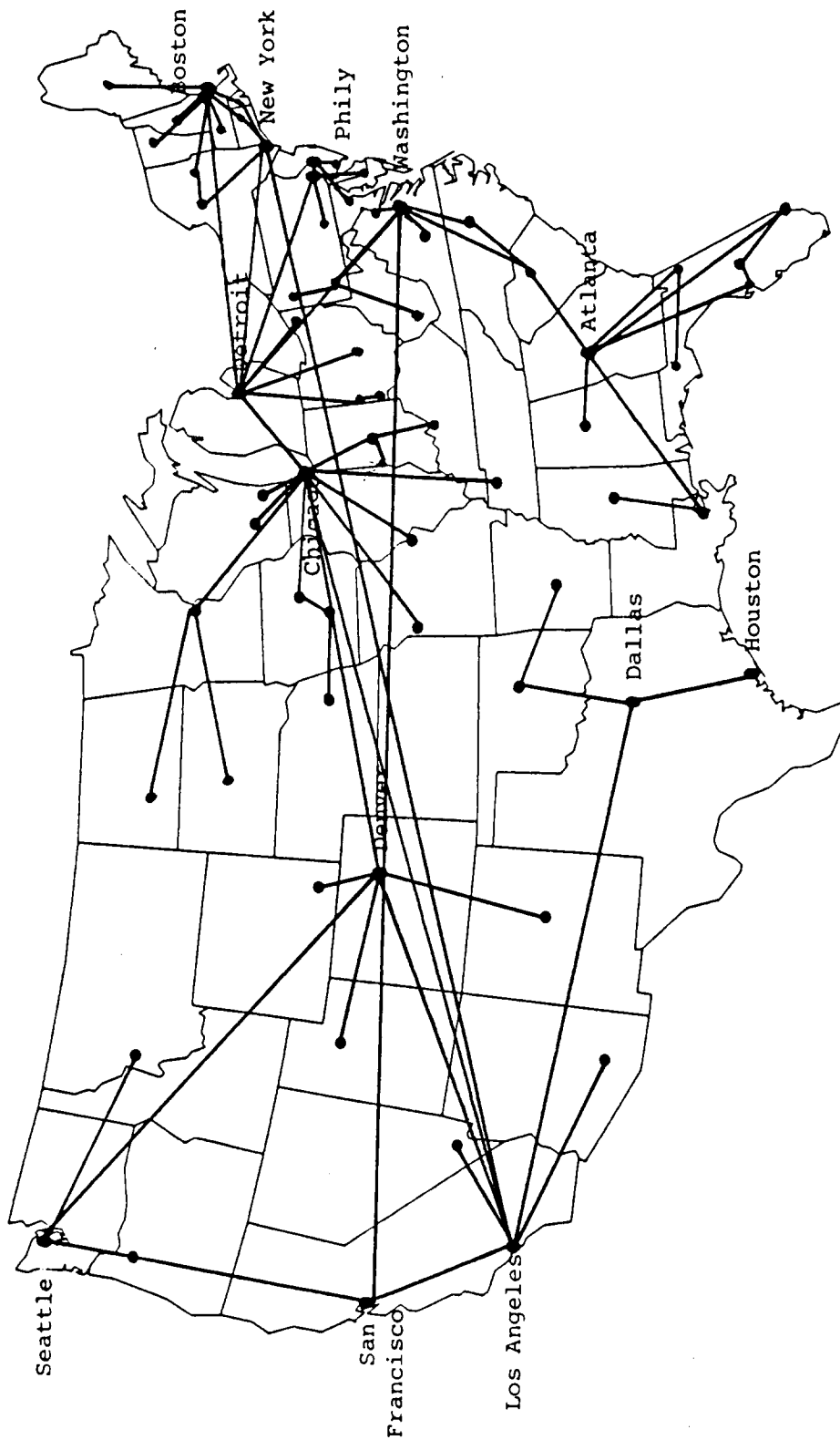


Figure 1. Conceptual Packet Switching Network

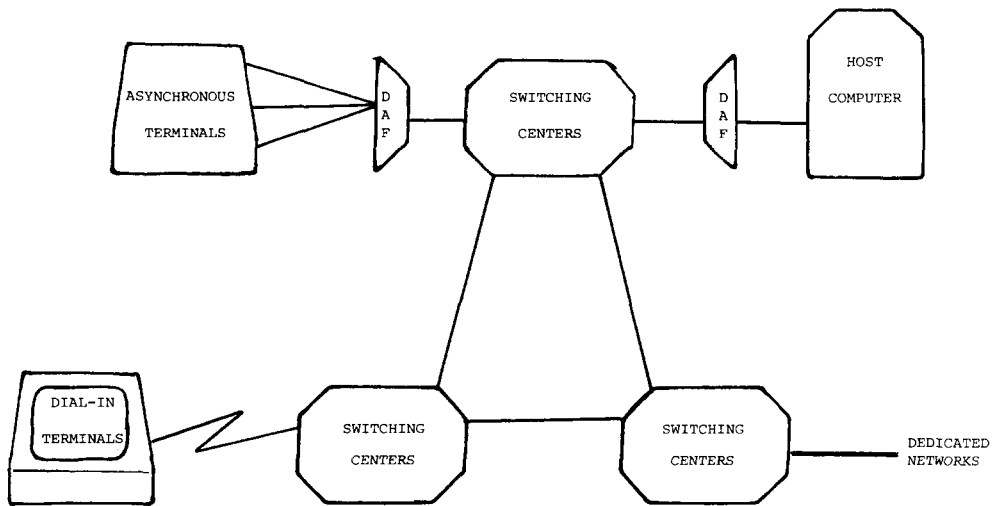


Figure 2. Example of a Packet Switching Network with Host and Terminal Access.

are spreading out their data processing/computer sections because current access to a centralized system is inadequate and costly. They have too many locations, both nationally and internationally; poor and costly public long distance experience; and costly dedicated long distance lines. These problems can be reduced with the corporation becoming a host node on a PDCN. Upon connection, all national and most international locations have access to the host center. Long distance direct dial fees and dedicated line fees are eliminated with network access fees at considerably reduced rates. Downtimes associated with dedicated lines are also eliminated.

As for the fourth reason for PDCN consideration, current users of the network can access the network through the main computer and pay no network access fees. Access to database vendors is through noncollect ports so there is no chargeback from these vendors.

Benefits

Cost savings is one of the major benefits a corporation might see as a host on a PDCN. A comparison of dial-in and user access charges is shown in table 1.

Depending on total corporate usage, cost savings can be significant. However, cost cannot be the primary determining factor. Other variables must be considered. Corporatewide access to centrally located business files becomes facilitated. Personnel records, accounts files, supplier information, accounting programs, budget software, and word processing—once scattered and varied—can be centrally located and made uniform. Access to a central library is established. Library files and routines, such as the serial file, online catalog, purchasing, online search requests, interlibrary loan requests, and all library and corporate datafiles, are either made accessible or made feasible as additions to the computer system. Electronic mail, previously only used at the computer location, becomes realistically available on a corporatewide basis. The potential uses of access to a central system must be considered along with the costs and savings to the corporation. However, both start-up and continuing costs are of major concern to corporation accountants. The cost involved in becoming a PDCN host is outlined in table 2. These costs would be for a single host location. It is likely that for larger corporations, with subsidiaries that have

Table 1. Communication Cost Comparisons

Host Costs:	
Direct dial (business hours) (distance dependent)	\$30.00/hr
In-WATS	\$24.00/hr
Public Data Communications Network	\$5.00-\$11.00/hr
Savings between	\$13.00-\$25.00/hr
User Costs:	
Vendor Network Charges	\$11.00-\$14.00/hr
Public Data Communications Network	\$0.00/hr
Savings between	\$11.00-\$14.00/hr
Average usage of 50 hrs/mo = \$550-\$700/mo	
Savings = \$6,600-\$8,400/yr	

computer centers, it may be more practical to have several site hosts. Each host would then be connected through the PDCN to the other hosts and the entire corporation would have access to each host center.

Drawbacks

Becoming a host node on a public data communications network does have one major drawback. It will not solve a corporation's entire communications problems. As is indicated by the type of network, only data can be transmitted across the network. Voice communication cannot be handled.

Noncorporate Hosts

Even though the system seems to be designed for corporations, academic institutions and large statewide or regional

networks should look seriously into becoming a host node. Large universities with several campus locations and centralized computing could benefit by being a host. Large library systems could benefit from reduced dial-in access charges. Collections and online serial and catalog holdings could be easily available to the rest of the system. Interlibrary loans could be facilitated. These and other possibilities exist for a variety of library organizations.

Recommendations

Becoming a host on a PDCN is not the solution to data communications for all companies. Many are too small and becoming a host would not be economically feasible. In many corporations, the policy is just not to allow peripheral access to the main computers and datafiles. Corporations that look ahead and realize that

Table 2. First Year and Recurring Host Costs for a Public Data Communication Network*

	<u>1st Year</u>	<u>Recurring</u>
Purchase Interface Processor with 18 ports	\$10,000	—
Dedicated Access Facility—9,600 bps	15,000	\$15,000
Installation fees	2,100	—
Maintenance (DAF)	2,000	2,000
	<u>\$29,100</u>	<u>\$17,000</u>

* Figures are based on 1986 Telenet estimates.

full corporate access to corporate data will benefit the entire corporation must start by re-evaluating their data communication needs. Some of the questions to be answered are:

1. What are the current data communication methods and their usage costs corporatewide?
2. How much of the costs would be affected by being a host on the network?
3. How much and what kind of data is really needed by outside locations?
4. How much internal information is currently computer accessible?
5. What new datafiles can or should be created.
6. What currently used software can be utilized corporatewide?
7. What new software must be justified if greater user need is shown?

When these and all other questions about the state of the current system are

answered, and it is decided that the current methods of data communications are inadequate, public data communications network vendors should be contacted. Telenet, Tymnet, and CompuServe are just three of the major vendors to consider. Rates, equipment, service, and maintenance should be compared against the methods currently being used. If there is a need to reorganize the corporation's data communications needs, it may make economical and practical sense to become a host on a public data communications network.

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Kurt O. Baumgartner is a senior associate information scientist in the Competitive Intelligence Section of Pitman-Moore, Inc. in Terre Haute, Indiana.

Classified Documents in the Corporate Library

Patricia M. Shores

■ Most companies performing work as government contractors or sub-contractors must develop a system to insure the controlled distribution and safe maintenance of the classified material that is so often a by-product of such work, particularly in the defense industry. Managing classified documents within the corporate library provides the opportunity for positive exposure to management, a direct involvement in the company's ability to perform in the technical marketplace, and a distinct challenge for the information professional.

THE issue of global access to information has been making headlines of late—although not in a manner many of us would endorse or promulgate. While we, as professionals, welcome opportunities for communication, exchanges, networking, worldwide database availability, and more, such as were explored in our conference theme for 1987, few of us would choose to include methods of espionage and counter intelligence. Certainly, the Department of Defense would prefer considerably less access to the information used by the Testor Corporation to develop their model "Stealth Fighter Plane" kit, however nonexistent such a plane may be. (1)

It is inherent in the nature of defense issues that certain information be protected from global access. Incidents of espionage are by no means new, but per-

haps because of the increased potential to comprise our national security through technology, both as a weapon and as a means of access to information, the Department of Defense has made classified document control an unavoidable priority for anyone working within the defense industry. The ability to demonstrate competent control of classified material is an essential factor in a corporation's ability to bid on major government contracts and is no less critical for subcontractors. The Department of Defense maintains a vigorous schedule of testing industry for security control, and a business's rating can be a decisive factor in whether or not that business will thrive in contract competition.

The average citizen may be most familiar with the General Electric Company as a major manufacturer of high-quality consumer goods: dishwashers, refrigera-

tors, televisions, and light bulbs. It is less popularly known as a leading company in the development of commercial and military electronics, aircraft engines, and support systems. *Defense Electronics* ranks General Electric fifth in its "Top 100" survey of companies in the defense industry. (2) A 1985 publication, "Soviet Acquisition of Militarily Significant Technology: An Update," issued by the Department of Defense, identifies the General Electric Company as Russia's number one target for needed technology, as compared with 100 major defense contractors. (3)

The Aircraft Control Systems Department (ACSD) in Binghamton, New York, contributes this high ranking as a premier name in the defense business. ACSD is a leading manufacturer of real-time aircraft control systems, including flight controls, engine controls, and peripherals used in systems for flight, weapons, displays, and propulsion systems.

The Engineering Library provides information services to over 1,500 employees in support of the development and production of these systems. Classified document control is an integral component in the overall profile of library services. The decision to locate document control within the library was more likely born of expediency than of logic, yet the arrangement has proven fortuitous overall. Such an organization is, in fact, highly logical, for if one considers classified documents to be a specifically defined *special collection*, then the librarian or information manager is, in all likelihood, the one employee who is truly qualified, by virtue of both education and experience, to manage that collection.

Our library gains direct, tangible benefits from managing the classified document collection:

- *Positive exposure to management.* The Defense Investigative Service conducts on-site inspections at least twice each year. The inspectors have specifically commended our document control program in direct reports to our general manager.

- *High-quality staff.* The responsibilities related to document control require a degree of experience, education, and overall capability beyond those of routine clerical duties. This justifies the creation of a custodial position of a rank high enough to attract qualified candidates, who can make a positive contribution to the library operation in general.
- *Organizational interaction.* The nature of classified document control and production requires the cooperation and interaction of various departments within an organization. The librarian or custodian must develop a relationship with these other functions not only as library users, but as participants in the performance of the work. The result is to draw the library into an organizational network, increasing the kinds of exposure and communication available (figure 1).
- *Enhances library's contribution.* Classified document control is an essential function, of obvious relevance to business success. It is a specialized activity, not duplicated by other functions. It provides an opportunity to broaden one's professional expertise.

Our successful program of document control at ACSD is the result of two key factors: the development of an extremely workable, comprehensive staff manual and an automated program for record-keeping and report generation that complements, as well as expands, a manual system of accountability.

The Department of Defense provides direction to industry in security procedures primarily by means of the Industrial Security Manual, DOD 5220.22M, known as "The ISM." At our department, the ISM is more or less translated into a "department instruction" guide, which outlines a framework of employee responsibility. This publication lays the groundwork for all procedures related to classified documents. We have taken these instructions one step further, and

GENERAL ELECTRIC COMPANY
AEROSPACE CONTROL SYSTEMS DEPARTMENT
BINGHAMTON, NEW YORK

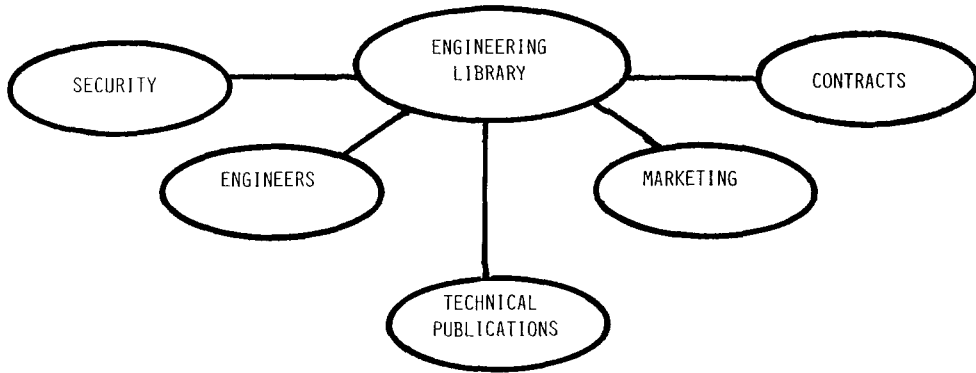


Figure 1.

developed a handbook for library personnel that defines each procedure in an easily followed, step-by-step format. This manual is an invaluable tool for training new staff, and as a guide when performing tasks that occur infrequently. It reduces the opportunity for mistakes, and provides continuity during staff changes or absences.

Unquestionably, the greatest contributing factor to detailed control and access to information regarding the status of our classified material has been the development of a computer program for classified document management. The program replaces a virtual encyclopedia of four-part forms and hand-filed indexes, which provided incomplete access at best.

We acquired our computer program in 1983, under the aegis of "you take what you can get." Although we were investigating the programs available for a completely integrated library system, our management was anxious to address the problem of classified document control specifically. A programmer was assigned to develop a records management program on our VAX/VMS mainframe us-

ing INGRES, a database utility available on the VAX. This was an attractive alternative to our management, since it represented a minimal outlay in terms of both hardware and software. The program functions extremely well for us, although it does present the usual problems attendant to an in-house system, particularly since the programmer is no longer available to solve the infrequent bug, and since INGRES is not widely used by our computer programmers.

The database contains a record for each document in the collection, providing all the required information describing the document, including special markings, and indicating its status: signed out, transferred, destroyed, etc. We can generate report listings by ACSD control number, contract number, title, source, "owner" or responsible individual, "user" or individual holding a document in circulation, declassification status by date, "other number," such as a DTIC or source control number series, and keyword. An "inactive" report, by document number, lists any documents that we have destroyed or transferred to an external location. We identify "owners"

and "users" in the system by their four digit General Electric pay number, which is unique to each individual.

In addition to the computer program, we also use "document log cards" to record all transactions. The cards duplicate much of the information for each document that is in the database, but provide something the computer cannot: each time a document is circulated, the individual user's signature verifies that transaction, and acts as a receipt upon the return of the material. The accumulation of signatures in and out creates a record of every individual who has had access to that document. Additionally, the log cards serve as a backup in the event of a computer disaster, and since the computer lists and card file should echo one another, they provide a means of verifying and double-checking our information.

The reports allow us to conduct spot-checks and inventories at frequent intervals without much effort. Owners receive updated listings identifying the material for which they are responsible. We can quickly identify any problems or discrepancies, and we work closely with our patrons to insure the integrity of our records.

The computer industry has grown dramatically in the few years since we initially investigated automating our records. It is less likely that we would have opted for an in-house program today, given the scope and flexibility of low-cost software and the increased availability of microcomputers throughout our department. Today, one could purchase integrated security management software that provides for document control, as well as a range of recordkeeping functions unique to industrial security. Library management programs could also be adapted to classified document control with some minor fine-tuning, as there are a number of vendors and programs readily accessible to the information professional which would serve the purpose. Cataloging and circulation are, after all, effectively the functions of the classified document center. One feature to look for in assessing the suitability of a library

management program to document control is *user-definable* field names. This allows the user to change the terminology of a record without changing the functions performed by the fields. In this way, a typical catalog record used to describe a monograph in a collection can be translated into a record that reflects the particular requirements of a classified document.

The Potential Defense Contractor Program

One of the most important functions of classified document control is to ensure that all documents are retained with authorization under active contract numbers. This can become a problem when a organization needs to hold technical information for reference or research purposes that do not relate to any current contract, but would nonetheless represent a considerable loss of knowledge and investment if destroyed. The Department of Defense has developed its Potential Defense Contractor Program in order to provide a legitimate method of retaining such materials.

Each branch of the military maintains its own format within this program. One must determine—according to the nature of IR&D work, ongoing research, or past contract performance—which branch, or branches, would be an appropriate sponsor for one's own organization. The forms, requirements, and guidelines are unique to each particular program. The paperwork generally requires a profile of one's organization detailing the level of commitment to IR&D projects, research, or programs of potential interest to the military. Finding one's way through the application process can be almost frightening, but well worth the effort. The library can make a significant contribution to the business—and solve headaches by the dozens—in providing this method of retaining essential reference documents while improving compliance with security regulations. Specific information regarding the Potential Defense Contractors Program should be obtained from one of the designated contacts for each

service branch. A list of contacts is provided at the end of this paper.

There are some particular considerations related to controlling classified documents within the library. Classified document control demands uncompromising attention from a staff that is almost certainly smaller than is ideal. The library must be designed or adapted to meet the facilities requirements for a secure environment. In general, one must expect the entire staff to qualify for a classified clearance compatible with the highest level of the documents. This will usually make it difficult to hire individuals who are not United States citizens, and can cause difficulty when working with part-timers, students, or temporary staff. In most cases, the physical layout of the library must be designed to allow for a separation of the classified area to accommodate restricted access. And classified material has an almost insidious way of establishing itself as a priority, whether you'd like it that way or not. Additionally, one must admit that few materials carry such grave consequences in the event of mishandling.

Yet, it is the optimist, the opportunity seeker, and the innovative who see the rewards behind the challenges. In the changing corporate environment, when services are relentlessly scrutinized for their worth and the bottom line provides the rationale for decisions within an organization, librarians and information managers must continually develop methods to improve and extend the impact they have towards achieving their companies' goals. By including classified document control on the list of library services, the information professional can claim a distinctive and essential contribution to the success of the individuals and the corporations they serve.

Defense Potential Contractors Program

Addresses for Contacts

1. Department of the Air Force
Potential Contractors Program (PCP)
 - Air Force Information for Industry Office

Triservice Industry Information Center
5001 Eisenhower Ave.
Alexandria, Va. 22333-0001
(201) 274-9305

- AFWAL/GLIST
Attn: Air Force Information for Industry Office
Wright-Patterson AFB, Ohio 45433-6523
(513) 258-4259
- Air Force Information for Industry Office
1030 East Green Street
Pasadena, Calif. 91106
(818) 792-3192

2. Department of the Army
Qualitative Requirements Information (QRI)

- Commander, Army Material Command
Attn: Technical Industrial Liaison Office
5001 Eisenhower Ave.
Alexandria, Va. 22333-0001
(202) 274-8948
- Commander, U.S. Army Armament R&D Center
Attn: SMCAR-RAM
Dover, N.J. 07801-5001
(201) 724-6978
- Commander, Army Aviation Systems
Attn: AMSAV-NR
4300 Goodfellow Blvd.
St. Louis, Mo. 63120-1798
(314) 263-1082
- Commander, Army Chemical R&D Center
Attn: SMCCR-OTT
Aberdeen Proving Ground, Md. 21020-5423
(301) 671-2031/5432
- Commander, Army Electronics R&D Command
Attn: DEL-TI
2800 Powder Mill Rd.
Adelphi, Md. 20783-2687
(202) 394-2687
- Commander, Army Missile Command

- Attn: AMCMIRN
Redstone Arsenal, Ala. 35898-5243
(205) 876-4270
- Commander, Army Belvoir R&D Center
Attn: STRBE-HS
Ft. Belvoir, Va. 22060-5606
(703) 664-1068
 - Commander, Army Tank-Automotive Command
Attn: AMSTA-NKTE
Warren, Mich. 48090
(315) 574-6372
3. Department of the Navy
Navy-Industry Cooperative Research & Development Program (NICRAD)
- Commander, Army Material Command
Attn: NARDIC
Room 8S58
5001 Eisenhower Ave.
Alexandria, Va. 22333-0001
(202) 274-9315
 - Navy Acquisition, Research & Development
Information Center/Pasadena
Naval Ocean Systems Center
1030 East Green St.
Pasadena, Calif. 91106
(818) 792-5182
 - Chief of Naval Material
Navy Department
Washington, D.C. 20360
(202) 692-2646
 - AFWAL/GLIST
Attn: NARDIC, WPAFB
Area B, Bldg. 22, Rm. S122
Wright-Patterson AFB, Ohio 45433-6523
(513) 258-4261
4. Defense Advanced Research Projects Agency
DARPA Potential Contractors Program (DARPA/PC)
- Defense Advanced Research Projects Agency
Attn: TIO
1400 Wilson Blvd.
Arlington, Va. 22209-2308
(202) 694-5919

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Patricia M. Shores is the librarian for the General Electric Company Aircraft Control Systems Department, located in Binghamton, NY.

From Library to Information Center:

Case Studies in the Evolution of Corporate Information Resources

Eva M. Thury

■ The evolution of corporate information centers is traced through interviews with seven information managers. These managers describe the growth and change in their information centers and highlight the new service areas into which their organizations have moved. Differences in breadth of role and point of attachment to the corporate hierarchy illustrate the diverse possibilities for organizing corporate information resources.

IN the past 10 years, the corporate information system has changed significantly in its structure, methodology, and impact on the corporate decision-making process. Ten years ago, the corporate library was the only component of the information system. Today the library has become part of a diversified information system whose elements have either been incorporated into what used to be the library proper or which includes the library as an independent information disseminating unit in a broader corporate information network. (1) The corporate information system is no longer only a resource that warehouses information and distributes it in answer to staff reference questions, but a proactive unit that generates in-

formation on a regular basis to provide stimulus to decision makers throughout the corporation. With easy access to electronic databases and word processing systems, the content of information systems has changed and the speed of retrieval has increased, providing the swift channeling of information to influence decisions at every level. (2) This change in the nature of the corporate information system has often been recognized by a reassignment of the system to a more direct place in the organizational reporting structure, often with a connection to the corporate public relations division.

This report will review some corporate information systems that have been restructured and redirected, in order to examine the factors that have caused that

restructuring as well as some of the ways in which corporations have reshaped information systems to fit their particular organizational needs. (3) Managers of information systems in major corporations throughout the United States described those systems in telephone interviews. The names of the corporations are omitted. Managers, male and female, are referred to as "he."

The Evolving Library

Until 1973, the headquarters' information system of a major oil company was a traditional library with a collection of books, magazines, and newspapers covering technical and business subjects. For the most part, decision makers obtained information not through the library but from their personal information networks. The primary occupation of the librarians was to answer staff reference questions from the resources at hand. In October 1973, the Arab oil embargo increased the company's need for rapid reliable information, causing the foundation of a new information unit in the public affairs department. "In attempting to cope with hostile public opinion and increasing government regulation we have developed a high profile, and this public stance has generated information needs unthought of prior to 1973," says the manager of analytical research services. The new information unit, when it began, subscribed to the *Trend Report*, an analysis based on more than 200 newspapers, and used the *New York Times* data bank and the services of the Conference Board for its public affairs information. But, increasingly, the two nonreactive services that had been performed by the library prior to the foundation of the new unit proved to be the backbone of the new information unit: a daily news summary for 1,500 to 1,800 of the company's managers, based on the *Wall Street Journal*, the *Journal of Commerce*, and the *New York Times*, and a clipping service that provided selective dissemination of information (SDI), regularly sending out full articles

on approximately 25 subjects to a small number of users.

The managers of the new unit expanded these services and combined them with wire services and data banks to produce a series of reports distributed daily to top company executives across the country: the Early Morning Report (EMR) is a package of 30 to 120 items from 11 newspapers and 4 wire services that goes out by 8:45 in the morning; the Midmorning Report goes out later with information that is not considered high enough priority for inclusion in EMR; the company's Alternative Energy Report is updated daily for top management; 3,000 middle and top management members receive the Daily News Summary, a one-page abstract of news; a twice-daily summary of wire service reports goes to middle management; and the TV department monitors major network and PBS news shows, and prepares a composite for distribution. The center operates on a charge-back budgeting system, with the departments that request information paying the price of the search or service requested.

In 1976, the library became part of the new information center. The center, now under the public affairs department, is in a much more direct position in the line of responsibility than it held in its former position under the general services division. In the course of this reorganization, the information center has grown from a staff of four in the library, with one professional librarian, to a staff of six professionals and eight clerical workers. The center is no longer a technical resource, but leaves the technical aspects of the energy industry to the company's other libraries. This has caused streamlining of its collection from 15,000 to 10,000 volumes. According to its manager, the library now concentrates on "the economic aspects of the industries and the ramifications of energy use in other areas: politics, agriculture, architecture, transportation, education, and so on." The change in this library arose out of the sudden need for quick access to information. The library went from being

a reactive to a proactive body. There was a structural change in the status of the unit as well—from being a general and technical resource to a service more oriented toward the goals and needs of managers. The reassignment of the library to the public affairs department reflected this change.

At a major bank, the library has moved towards providing management with public affairs information. "We are a part of the community we are in and it's important that we understand the parameters of how that community changes," says the manager of the information services division. "Our business is providing information to help people make good business decisions. We deal with issues that will affect the corporation—not just tomorrow, but on down the line." Although the library acquired automated elements in the mid-sixties, and began a Current Awareness Service in the late sixties, it was not until the early seventies that it refocused its energies on becoming an active, rapid information service with a positive attitude toward in-house clients. This refocusing led to the expansion of the elements of the Current Awareness Service, a weekly abstracting that covered 1,600 periodical subscriptions and a routing service that disseminated articles to managers interested in particular fields. The library now also offers interlibrary loan services, an extensive pamphlet file and pamphlet routing system, and the resources of these databases: Lockheed, SDC, the Information Bank, and Dow Jones. These services, and the abstracting service in particular, have performed an internal public relations function for the library, creating awareness of, and confidence in, its capacities as an information service.

Unlike the oil company information center described above, this bank's information service has no internal structural connection with the corporate communications division of the bank, but the two departments work closely together. According to the vice president and director of media relations, this cooperation is not the result of an exclusive relation-

ship. It is part of the close ties that the library maintains with management across the board. The vice president says that he is likely to get a call from the library bringing him up to date on a news story, like the current Iranian-Iraqi war. The library provides such information to all managers. For example, the executive vice president for operations and management services will also be apprised in the same way of news that affects the operations area of the bank. "The library established good working relationships throughout the organization," says the vice president, "and they've shown that there is a 'value-added' element which makes their services cost-effective." Like the oil company information center described earlier, this library has oriented itself much more toward the needs of managers, and has met their needs with a variety of proactive services.

Outreach and Training

Another major bank's information center began as an employee lounge that housed some books, grew into a professional library with a business collection, and now functions as an information service for the bank's 5,000 employees and 133 branches. The center offers material for research and reference questions: books, periodicals, newspapers, annual reports, a pamphlet collection, materials on microfiche and microfilm, loose-leaf services like *Moody's Industrial Manuals*, and bibliographical and nonbibliographical databases. For the past four years, it has provided SDI, periodical routing service, and a consolidated periodical ordering system, which centralizes the subscriptions of all corporate users of 16 titles, combining invoices to obtain group rates and cut down on duplicate paperwork within the bank. The manager of the information center explains that the change of name from library to information center indicates a real shift in the focus of the facility. "We are more active in providing information than the typical library. We go through all the indexes and

round up material. We store away in our minds who's working on what and refer new information to them as it comes to us. Right now we don't have a computerized internal reference service but I sense the need in the future for that sort of data base."

Within the past year, the information center has become active in the training area, disseminating the Self-Study Program, a package of workbooks and cassettes that includes Berlitz' French and Spanish courses, an executive writing skills program, and the Drucker cassettes on management, as well as bank-related modules on topics like analyzing financial statements and how to handle problem loans. The Self-Study Program supplements programs offered by the bank's training and development department. It provides employees who are not selected for management training classes with ways of improving their skills so that they can initiate the promotion process for themselves. The information center was chosen to administer the program, says its manager, "because we are perceived as being knowledgeable and efficient in the circulation of materials." The program is publicized through a yearly catalog of offerings, which the information center will now work to broaden by systematic investigation of programs available and of the needs of bank employees seeking self-study training.

The center has also begun to handle materials for a training program offered by the American Institute of Banking. This program consists of courses given in community college settings, which allow bank employees to earn certificates for work in areas such as English (writing skills), basic math, principles of banking, and accounting. These new areas of responsibility, and an easier access to a good budget, have come to the information center, says the manager of the center, "as a result of good public relations. We have demonstrated our capability to people, and this is perceived even at the higher echelons." This library incorporated resources for training into

its services and has, thus, broadly shown its usefulness to its institution.

Ten years ago, the research library at still another major bank reported to its corporation's economics department. The library is now part of the corporate communications department and functions as a separate entity with its own budget; it is now able to account for its own purchases for a collection whose major focuses are general business, agriculture, and industrial relations. According to the library manager, the library provides material support for decision making, ranging from the activities of loan officers in the field to bank-wide strategic planning on issues such as needs assessment and locations planning for the opening of a new branch. The library offers a computerized periodical routing system designed by in-house programmers to be mounted on the bank's computer. It also offers limited SDI—this is not a widely sought service—and handles a heavy reference load, a major portion of which involves online searches.

This particular bank, like the oil company and the first bank described above, provides a current events abstracting service, but this does not emanate from the library. Called the Mid-Day News Report, the service comes from the corporate communications department. The Report, distributed to every unit in the bank, is drawn from the wire services and aims to update employees on events occurring after the *Wall Street Journal* goes to press. In addition, the legal library, which is a separate entity in the bank's public affairs department, provides a daily news summary based on the *New York Times* Information Bank to legal staff.

The research library actively markets its services to the bank; its staff monitors user statistics to identify those departments that could benefit from library services but are not using them, and keeps track of employee turnover to pinpoint those departments with many new employees who are likely to be unfamiliar with the library's resources. The library then offers to give a presentation at such a department's staff meeting, detailing

what it can do for that particular department. "We get a good response to this active approach," says the library manager. "People like to be noticed, and they tell each other what a good job we have done for them. Departments will approach us to come and give a presentation to them. As a result of our public relations work, people come to us more, and they come to us more intelligently. They've done some thinking before they walk in the door and are articulate and efficient about what they want to know. Their approach to the library is more effective."

This corporate library, like several others described here, has developed a variety of reactive and nonreactive services for managers and has, in addition, learned to package itself effectively, realizing that libraries, like companies themselves, must make their services known to their "customers."

Position in the Corporation

At a major publishing company, the library has been enlarged and improved in the past decade, but it has not become a factor in the decision-making process; a business information service has been developed in another part of the company, the financial area. The library, which is used primarily by editors and secretaries doing research for books that the company is preparing, contains all the books ever published by the publishing company, as well as a substantial loan collection, a reference collection, and 800 magazines. The library has not expanded to databases, however. The librarian reported that he learned that the company possessed databases by overhearing two people talking in the elevator.

The department of management sciences, a part of the accounting department, acquired 800 databases with the aim of providing management at the publishing company with the information needed to make decisions. The manager of this department has training not as a librarian but as a mathematician and

operations researcher. Initially, databases were acquired by the accounting department to provide information on CAB flights, oil imports, and other matters relevant to decisions on market segmentation, product pricing, publication targets, and mergers and acquisitions. The new information center was eventually moved out of accounting, but still reports to the company's chief financial officer. Its equipment is available, on a charge-back budgeting system, to aid the searches of library staff, but most library staff do not have the training to use it. The head of the management sciences department believes that the significant criterion for whether a library will become business oriented is the willingness of librarians to handle computerized information. In addition, traditional librarians are not, in his view, geared for business purposes; the secrecy required of those working on a business information system runs counter to the ethic of openness and readiness to disseminate information that normally characterizes a good librarian.

The information system built at this publishing company is tailored to the immediate needs of company managers for information on matters that currently affect the company. Databases provide financial and economic information for marketing and acquisitions decisions. An active public affairs information disseminating unit is beyond the reach of this publisher, says the management sciences head. "Only the oil companies can afford that kind of information-gathering network." Here news services and newsletters from lobbyists are the main sources of public affairs information.

At a major industrial investment bank, the library has become the organization that now coordinates the entire research product line—from the point when an analyst first comes in to investigate an industry in which he wants to invest for a client, to the writing of the resultant industry analysis in conjunction with an editor, through the typesetting and preparation of the final product by the graphics department for presentation to the

client. Ten years ago, when the present director was hired as head librarian, the graphics department was under a research director and the word processing system, which has now become the center of the composition process, had not yet been installed. The director put in word processing and established a relationship with the graphics department, unifying the process of preparing client reports under the library, which had always been the point to which the investigation returned. The director, now vice president of administration, supervises the entire research product development process.

The library now provides other proactive services as well. The Weekly Research Summary, a condensed compilation of all company analysts' reports, is distributed throughout the organization and to all clients, and is used to promote new business. The acquisitions indicator gathers information from everyone in the firm on any clients who are trying to buy or sell businesses and distributes this to banking-area management personnel. These exchanges of information provided by the library enable individual analysts and managers to benefit from systematic and casual information their colleagues have acquired and to draw on each others' expertise in a time-efficient manner.

Increasingly, companies that have not had libraries, or those that have had weak ones, are feeling the need to organize and deliver information quickly and in a way sensitive to company needs. A major consulting firm in executive recruiting felt the information pinch. They "head-hunted" a librarian who had established a library for a major investment banking firm, doubled his salary, gave him the mandate to create a library from a collection of client files and a few periodicals and directories, and provided him with the title of vice president and director of research.

As director of research, he feels that his first task is to establish an internal data bank based on client files, consisting of records of corporations and what has

been done for them, and functions which have been filled for clients by the firm. After this internal organization of information, he plans to acquire several databases, a microfiche machine for corporate material, as well as a word processor for client lists. He also faces the tasks of building a collection and creating a holdings list and a shelf list detailing the current collection.

The hiring of this librarian was the third effort on the part of the consulting firm to set up a library. Previous efforts included hiring a librarian recently out of school, with relatively little experience, as well as hiring an MBA graduate to establish an information system. The MBA became involved with the public relations department, and the burden of unorganized information continued to plague the firm. Neither one of these initial efforts resulted in an effective proactive system.

By hiring a librarian with experience in designing a special library, the consulting firm has made a strong commitment to creating a proactive system. The firm now envisions an organizational structure in which the librarian, as director of research, will report directly to the chairman of the board, and the organization created will provide information to each person working for a client.

Conclusion

In conclusion, corporate libraries are becoming information systems as they move from being warehouses of information to functioning as self-initiating disseminators of information sensitive to the needs of managers in every division of a company. This proactive role leads to the packaging and active distribution of information on public affairs, governmental policy, marketing trends, and market conditions, as well as to a managerial role in the creation and design of the services that a corporation renders. Proactive services become essential to expansion as information services shift to-

ward meeting the needs of busy managers who need an intermediary between themselves and the glut of information with which they would otherwise be presented.

Many of the information systems considered here have moved toward serving the needs of corporate decision makers. This has meant, in one case, narrowing the range of services offered, and, in all cases, it has meant focusing and integrating services. If information centers are to serve managers effectively, the evidence indicates that they will work increasingly with computerized material. The publishing company described above illustrates the choice that lies before many corporate libraries. In the same institution, two information services co-exist: one is a library with a limited budget and the other, the Department of Management Sciences, is a large and growing information center.

The manager of this center believes that the most important criteria for whether a library will become business oriented are whether the librarians will accept the values and goals of the organization's management and will adopt computerized technologies to further these goals. Yet this is not to say that librarians should be replaced by managers. The failure of the MBA graduate to establish a satisfactory information center in the consulting firm is a reminder that growth needs to be based on a central core of information indexing, retrieval, and dissemination practice. Other challenges for corporate information centers may include determining who are their primary users, so that they can pro-

vide specialized information services to that group, as well as determining the extent to which the library's services need to be marketed to the organization.

The exact function that the new "information center" library will serve will be determined by the pre-existing structure of the corporation, the personalities and capabilities of the managers who staff that structure, the resources available, and the needs of the industry and of the particular company within the industry. (4) Organizations that have previously functioned successfully without such information centers are beginning to see the advantages and opportunities that the creative and rapid dissemination of information can provide for affecting their role and status in the marketplace and the community.

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Eva M. Thury is an associate professor of humanities and communications at Drexel University in Philadelphia, Pennsylvania.

Testing the New Technology: MEDLINE on CD-ROM in an Academic Health Sciences Library

Beryl Glitz

■ The UCLA Biomedical Library tested a six-month portion of the MEDLINE database on compact disc to determine its potential application in a large, university health sciences library environment. Patron response to the system, previous search experience, and actual search strategies were recorded. Although the overwhelming user response was positive in spite of little previous experience with online searching, results show underutilization of the system because of both software and hardware problems. The implications of this test underline the important role libraries must take in guaranteeing that new reference tools like CD-ROM be made genuinely user-friendly.

Introduction

THE UCLA Biomedical Library was asked in the fall of 1986 to test Cambridge Scientific's Compact Cambridge/MEDLINE, a six-month portion of the 1986 MEDLINE file on compact disc. This paper will describe why we decided to test this product, what preparations we made for its use in the library, and how our patrons responded to this new type of bibliographic tool. I believe that the questions we asked, both philosophical and practical, are the questions that all libraries should be asking about this new technology. In conclusion, I will discuss the implications

this type of technology has for the future of library service.

Our library is one of the largest and busiest health sciences libraries in the country open to the general public, as well as to the university community. We perform a large number of computerized literature searches, most of them on the MEDLINE database. In the academic year 1985/86, of a total 1,895 searches, 1,469 of these or 78 percent were on MEDLINE. In the last two or three years, many of our patrons have become interested in doing their own searches, and we have begun an active educational program for end-user searching. Because so many of our patrons need MEDLINE, usually de-

mand rapid delivery of database search results, and some, at least, seem interested in doing their own searching, we felt that MEDLINE on CD-ROM would be an important new tool for our library. We were therefore eager to evaluate this product.

Our library is an extremely busy one: typically 2,500 individuals enter the library daily. Despite the high volume of activity at the reference desk, we can only schedule one librarian each hour. Therefore, we must always consider the possible impact on public service staff when we contemplate the introduction of any new tool or service. We were thus very anxious to learn just how "user-friendly" CD-ROM technology might be: Could our patrons learn to use it with no more help from a reference librarian than would be provided if they were using the printed *Index Medicus*? Also, we needed to know just how library users would react to CD-ROM and whether it would be a useful and appropriate new reference tool. We assumed that users would in fact appreciate and use this new technology. Our final questions centered on the quality of the search process and results for the library user. Would CD-ROM provide appropriate and sufficient access to a complicated database like MEDLINE? Could new users access the system easily and retrieve what they wanted? Could experienced users bypass the more simplistic searching method once they knew the system?

Preparations for Testing

With these questions in mind we began our preparations for testing MEDLINE on compact disc. Before the equipment and software arrived, we identified several management questions we had to address, questions which apply to the testing of any new technology:

1. What equipment would we need to run the test. What would the producer supply and what must we provide?
2. Where should we locate the equipment, in this case a CD-ROM work station, in the library?
3. Which hours of the day should we make this new tool available?
4. How could we best prepare the reference desk staff to cope with the new tool?
5. What kind of help should we be prepared to give our patrons when they used the equipment?
6. How should we publicize a new tool like CD-ROM so that it was indeed used?
7. How could we best obtain feedback from the patrons who used the new tool?

The first issues were easy to resolve. Cambridge would supply the CD player and MEDLINE disc, the search software, connecting cable, and the interface card for the PC. The library had available an IBM-PC with 512K of memory, two disk drives, and an empty expansion slot. We also had an IBM Proprinter to use as part of the work station. We decided to locate the CD-ROM station close to the reference desk so that staff could more easily promote the use of MEDLINE on CD-ROM with our patrons and be able to observe its actual use. Since we had no idea how much help patrons might need and because we could not secure the equipment very well, we decided to make the service available only during the hours that the reference desk was staffed.

In order to help prepare reference desk staff, a memo was sent to all librarians who worked at the desk detailing the when, where, and how of equipment setup; our objectives in doing the test; our plans for staff orientation and training; and our ideas for publicity. We were very aware of the importance of keeping staff up to date with plans for any new tool or service and of providing adequate opportunities for them to learn about new equipment and its possible impact on them.

In terms of patron assistance, we felt strongly that this should be kept to a minimum. If CD-ROM was indeed going

to be feasible in our library environment, then patrons must be able to use it with little help from the reference staff. In order to create a realistic test situation, we wanted to prepare a handout that would show patrons how to get started and how to perform searches with a minimum of help. We decided to wait until we had a chance to use the system ourselves before drafting the exact instructions for the handout.

To publicize the service, we wrote a brief article for our monthly acquisitions list, a vehicle we often use to tell patrons about new services or instruction programs. This list goes to faculty and staff who pay a subscription for it. We also sent out a flyer to all the second-year medical students at UCLA and informed our Library Advisory Committee. We placed a large sign in direct view of everyone entering the library, which advertised the availability of MEDLINE on CD-ROM.

Finally, we designed an evaluation form that would tell us how our patrons reacted to CD-ROM. With this form we hoped to learn the following: who our CD-ROM users were, how much previous searching experience they had, how easy it was for them to learn to use the system and the equipment, how satisfied they were with their search results, whether or not they used the more advanced method of searching, if they would use a system like this again, and if they thought the library should buy such a system. On the form, we also asked for a short description of their search and their comments.

Setting up the Work Station

Although we were now ready to perform our test, there were delays in receiving the CD-ROM equipment. I think this is a common problem in dealing with manufacturers, so libraries should be aware of this when making their overall plans. When the equipment finally arrived, several staff members tested it. From their reactions and suggestions and from reading through the manual that

came with it, we decided on the basic information our patrons would need to get into the system and to start searching. We decided that we would create a single sheet of instructions, telling people how to know when the system is functioning properly; how to get help; how to choose options from the menu and briefly what those options meant; how to correct errors, truncate, and return to previous screens; and how to print out their search strategy and exit the program. On the instruction sheet we would also remind them about using medical subject headings in their searches, tell them that they should consult the user manual for further help, and ask them to fill out an evaluation form. We did not want to go beyond that; if we had to provide more information, then the system was not user-friendly.

We decided to keep the search manual at the reference desk since we only had one copy. We located the box for completed evaluations next to a supply of blank forms beside the CD player, hoping that patrons would not miss them! In the instructions we asked users to print out their search strategies and include them with their evaluations. We had hoped to learn about their searching techniques from the printouts. A separate set of instructions was prepared for all the reference librarians, which also described the kinds of help we should be giving patrons and encouraging everyone working at the desk to try the system. We held an orientation session for desk staff, which included a demonstration of the system and practical details on setting up and storing the equipment. Now we were ready to go public!

If we had had any doubts that our patrons might not use CD-ROM or not appreciate it, they were soon dispelled. We were, in fact, rarely lacking in test candidates, and people were very good about completing their evaluations. We had a few questions about which subject heading to use in a search and some problems with running out of data storage space because previous users had not erased their search statements. Most of the

questions and difficulties, however, dealt with printing. The printer itself gave us a lot of problems with jamming and error messages. We also experienced some queuing problems when several patrons wanted to print out lengthy search results. The rest of the equipment functioned smoothly, and people just sat down and used CD-ROM without much consultation with desk staff.

Evaluation Results

Overall we received 63 completed evaluation forms during the two weeks we had the system available. We are not sure if this reflects the actual number of users; we did do our best to encourage everyone to complete the form. Not all 63 people answered every question, but many people included comments.

Of the 63 who responded, 24 percent were faculty, 18 percent were staff, 40 percent were graduate or professional school students, 5 percent were undergraduates, and 13 percent gave no affiliation. Since our library is open to everyone, including the general public, we did not restrict access to CD-ROM to any group of library users.

In the area of previous search experience, 65 percent of the respondents said they had never done a computer search before. Of the 33 percent who had, several listed the library's online catalog as their searching experience. Clearly a lack of experience did not prevent people from trying this new method of searching the literature. Neither did it prevent them from quickly learning how to use it. An overwhelming 83 percent said they found the system easy to learn and easy to use once learned. Only 13 percent found it difficult to use. Though the basic search system was obviously not a problem, only 25 percent used the more advanced searching method. Many people made comments on the searching methods; most centered on the slowness of the system. Users obviously did not like waiting for what seemed a very long time while the system searched, especially when they used the advanced method. And

they were even more unhappy at having to wait a long time only to then be given another search option rather than actual results. We realized of course that some of the slowness was due to using a PC rather than an XT or AT, and libraries need to take this into consideration when setting up CD-ROM equipment. Several people also complained that they did not know if the system was still actually operating while it searched. They would have liked some indication, e.g., a flashing message, that it was still working. Another frequent complaint about the search system was its lack of flexibility. It seemed that most users did not find out how to combine search statements, so could not modify their searches. This capability was not included in our search manual and could only be learned by reading through six help screens!

As to user satisfaction, 57 percent indicated that they were satisfied with their searches; 30 percent said they were not satisfied. It was interesting to note, however, that 85 percent of those who were not satisfied still said they would use the system again, and 63 percent of them went on to suggest that the library purchase it. We were a little suspicious of these responses, however, when we looked at the search strategies we received. Unfortunately, there were not as many of these strategies handed in as we had hoped because of printer problems. However, we discovered that people were retrieving either huge numbers of citations on very broad subjects or just one or two on a topic that clearly had more information available in the database. One respondent who did attach her search strategy and who said she was satisfied with her search had actually retrieved 826 citations, while another "satisfied" user found nothing on his topic.

Apart from not being able to combine search statements, a major problem that several people had was not using medical subject headings but relying on text words and, thus, missing many pertinent citations. In retrospect, we feel that we should have phrased our question on user satisfaction differently. When people re-

sponded positively we did not really know if they were satisfied with actual search results or satisfied with being able to do the search themselves. A more appropriate way of asking for user satisfaction would be to ask how many citations were retrieved, how many were wanted or expected, and whether or not those retrieved were pertinent.

In spite of questionable retrieval, slow response time, and many printer problems, an overwhelming 85 percent of all respondents said they would use the system again, only 6 percent said they would not, and 74 percent felt that the library should purchase the system. Several people, though critical of some features, felt that the library was "on the right track" in providing such a tool. A few respondents complained that the system did not cover a long enough period of time, despite all we had done to inform patrons that the disc was only a small demonstration. Clearly CD-ROM was a hit with our users even when they did not really get what they wanted from it.

Implications for the Library

What did we learn from testing this new technology in the library and what are the implications for any library in providing new, technological tools like CD-ROM for their patrons?

1. There seems to be little doubt that patrons like doing their own searching and are obviously willing to try out new, electronic searching methods, even with little or no previous experience.
2. Using tools that don't give people exactly what they want but do print out their results may be preferable to paging through printed indexes and laboriously writing down citations.
3. People don't necessarily understand what a system can really provide for them and will underutilize it if its features are not readily and easily apparent.
4. While people need systems that are easy to learn and use, they must be provided with problem-specific help where and when they need it so they can use all available features without having to read through lengthy help screens or printed manuals.
5. Since it is difficult for people to understand the coverage of electronic tools, like CD-ROM, which are so different from a printed tool, providing the user with enough information about what they are searching is extremely important.
6. Databases designed like MEDLINE, which are searched more effectively using specific subject headings, must be easily searchable with those headings, and, if patrons insist on entering text words, as we know they do, the search software must be able to accommodate this and automatically convert text words to appropriate subject headings.
7. If CD-ROM technology is to be useful in large, academic libraries, which cater to many types of library users, then CD-ROM systems must be truly user-friendly to everyone, with search capabilities flexible enough to accommodate many levels of ability. For experienced users, menu-driven methods must be easily bypassed in favor of a more rapid and responsive method that assumes a greater knowledge of searching skills.
8. Busy library users, like health practitioners, may be patient with new technology at first, but their patience may wear thin when the novelty is over. If CD-ROM systems are to be truly user-friendly, these search systems must provide rapid retrieval and communicate with the user so that he or she knows when a response is due. Also, hardware must be easy to operate so that citations can be quickly printed or downloaded so that the system can be freed for the next patron waiting.

What does all this mean for the library? It behooves us to take an active part in testing new technology, such as CD-ROM, so that we can make sure the manufacturers will develop the kind of systems that we and our patrons really need: user-friendly systems that provide rapid and easy access to information and which are not a drain on our already

overburdened public service staff. Technology like CD-ROM holds great promise for libraries, but it is librarians who must help ensure that the promise is fulfilled.

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Beryl Glitz is educational services coordinator at the UCLA Biomedical Library in Los Angeles, California.

Optical Digital Disk Storage: An Application for News Libraries

Mary Jo Crowley

■ As an alternative to microfilm or fiche, optical disk technology provides an ideal storage format for a news library's clipping collection. The following description of the technology, the equipment, and the procedures necessary for converting a clipping collection to optical storage are part of a request for proposal.

The Project: What Are We Trying to Do?

FOR those who are not familiar with newspaper libraries, it is helpful to begin with a brief description of what is referred to as the clipping collection or simply "CLIPS." As stated in *Guidelines for Newspaper Libraries* (ANPA; Reston, VA., 1984, p. 47), "the clipping collection is the unique part of the newspaper library." Whatever its shape or size, the clipping collection contains and stores articles clipped from that newspaper which the library serves. Many newspaper libraries also file selected material from other newspapers and/or periodicals.

In 1980, the Philadelphia Newspapers, Inc. (PNI) Library began computer storage of its published stories in a full-text database system. By 1981, librarians had entirely ceased clipping both the *Phila-*

delphia Daily News and *The Philadelphia Inquirer*. At present, over seven years of clips are stored electronically. The in-house database, which is accessible to the reporting and editorial staff from their word processing terminals, has taken over the role of the clipping collection for accessing current and recent-past news stories. However, despite the increased use of current clippings online, it is apparent that use of the paper clips for historical and reference information remains at a constant level.

At the same time, because of the nature of newsprint, the paper clippings are deteriorating. Other than standard microfilming of the final edition of the two papers, no microfilm or fiche project has ever been undertaken by the library. Since the paper clipping collection is archival and static (i.e., not being added to), it seems appropriate and vital to look for a method that will preserve the in-

formation in the collection, provide easy accessibility, and save space.

Identifying/Estimating the Dimensions

The PNI Library clipping collection consists mainly of newspaper clippings from *The Philadelphia Inquirer* and the *Philadelphia Daily News*, but includes other printed or typewritten material dating from 1926, when the library was founded, to 1981, when clipping ceased. Some of the additional papers and periodicals clipped include: the *Philadelphia Evening Bulletin*, *The Philadelphia Record*, the *Philadelphia Public Ledger*, *The New York Times*, *The Wall Street Journal*, the *Camden Courier Post*, and *Philadelphia Magazine*.

The clips are folded and filed in #10 envelopes. The envelopes are then filed three rows to a drawer in legal-size filing cabinets. The outside of each envelope bears a typed subject heading for the clippings contained therein. Cross reference information (to relevant clips located elsewhere in the collection) also frequently appears on the envelopes.

Based upon sample measurement, we estimate that there are approximately 5.8 million clips in the collection.

All these statistics may seem irrelevant or useless right now, but for those who are looking at how to do this for themselves, we hope this will be helpful. Knowing the dimensions of the collection is important, both in gathering information and in presenting the proposal to management. It is necessary to identify the size of the project in order to estimate it in measurable terms of money and man hours.

Clips can vary in size from 2 inches by 2 inches to entire broad sheets measuring 14 inches by 24 inches (larger than the standard photocopying screen). Because of the irregularity of clip size, it is difficult to really get an accurate measurement of the number of clips per linear filing inch, although this would be a useful measurement to have.

Over the past two years, the library has had an ongoing program of straightening and *weeding* the clips. The results indicate that 5–10 percent of the collection is being discarded primarily because clips have physically deteriorated. At present, the collection continues to deteriorate due to the fragile nature of newsprint, the lack of humidity control in our facility, and the continued use of the collection. There is historical, reference, and research value of unmeasurable worth in this collection; it should be preserved before any further loss is incurred.

Looking at the Alternatives: Which Method Does What?

We want a storage system for the clipping collection that will be easy to use and access, easy to store, take up less floor space, be relatively indestructible, cause minimal staff frustration, and provide paper copy if desired.

For the majority of staff members of our two newspapers, electronic retrieval of clippings has become a way of life. They are often now surprised when an article is not available online. Our staff also resists using roll microfilm (not to mention microfiche). Hence, our consideration from the beginning was microfilm or fiche with computer-assisted retrieval.

Table 1. Clips in the PNI Collection

1 legal file drawer = 84 inches (3 rows at 28 inches)
Total 930 file drawers = 78,120 filing inches
Personals: clips = 3,000,000 (average 450 clips in 5 inches)*
Subject: clips = 2,800,000 (average 280 clips in 5 inches)*
Total clippings: 5,800,000

*These figures were obtained by measuring representative (fat & thin) envelopes in different parts of the personal and subject files, counting clips in the selected areas, then averaging the numbers.

Microfilm and Microfiche

Originally, when we began looking at preserving the collection, we sought the advice of several other newspaper librarians concerning their experiences with the microfilming of clippings. It was through their contributions and suggestions that a sense of the project began to take shape.

In the beginning, the expectation was to use a service bureau to do the filming. We did not have enough space in-house to set up the number of cameras needed to film in a reasonable amount of time (three to five years). We also felt that we did not want the expense of purchasing equipment that would not be used for anything but this project.

There were also decisions to make regarding which size and type of microform to use. Did we want roll film or fiche which would be reproducible, or film in cassette form which would involve less staff handling?

Yet another decision to be made was whether to film on 16mm or 35mm. This decision also revolved around the cost and availability of viewing equipment. While 16mm is a more common format for fiche and cassette, 35mm does a better job handling those full-page size clips (14 inches by 24 inches) mentioned earlier.

As can be imagined, these were not the only considerations. The primary consideration, which is indigenous to whatever method a library uses to preserve its clipping collection, is the labor-intensiveness of the project. Surely most people are familiar with and thoroughly experienced in the art of photocopying maga-

zine or journal articles. Laying out a group of four or five newspaper clippings, which slip and slide on the glass of the photocopier, can be a time-consuming task. By separating that task into its elements, one can see that there is not much streamlining that can be done:

1. remove clips from envelopes,
2. arrange in chronological order by date,
3. unfold clips and *relax* (crease fold in opposite direction, iron, steam etc. . .),
4. place on filming surface (taping is often necessary),
5. arrange to make the best use of space,
6. copy or scan, and
7. refold and place in original envelope.

To get a comparison figure on how fast a person can lay out clippings for scanning, one can try an experiment on a photocopier (table 2).

In both examples, although the number of clips per frame varies, the time it took to lay out those clips and copy them was almost identical (14 scans per 30 minutes = 28 per hour; 7 scans per 12 minutes = 32 scans per hour). One can copy or scan approximately 30 scans per hour or 2 minutes per procedure. (Please remember this is a generous estimate. Because materials are inconsistent, some envelopes will take more time, others less.)

Using 365 twelve-hour days as a work year, 122,640 scans (490,560 clips) could be completed. A total of 500,000 clips represents 10 percent of our clipping col-

Table 2. Time Estimating for Clip Scanning

The *average* number of clips one can fit onto a copier (or into a frame of 16 mm film) is four. After much practice, trial and error, the *best* average photocopying speed we could obtain was 28 copies per hour.

example: 1 envelope of 71 clips
30 minutes to copy
resulting in 14 (scans) 11-by-17-inch sheets

example: 1 envelope of 26 clips
12 minutes to copy
resulting in 7 (scans) 11-by-17-inch sheets

Table 3. General Formula for Scanning Clips

Scans (frames, copies) per Hour (SPH) \times 4 = # Clips Per Hour (CPH)
(completed)

CPH \times 8 working hours = # Clips Per Day (CPD)

CPD \times working days per year = # Clips Per Year (CPY)

Here are some rough estimates:

28 scans per hour = 112 clips per hour

In an 8-hour day: 224 scans (896 clips)

In a 12-hour day: 336 scans (1,344 clips)

lection. At this rate (using only one scanner), the project would take 10 to 12 years to complete.

A more realistic estimate is probably an eight-hour day with 240 work days per year (240 days allows for weekends and vacations). This could yield about 53,760 scans (215,040 clips) processed in a year. What this all boils down to is: for our library clipping collection to be completely scanned (or micro-filmed) within a reasonable time period, we would need several scanners and enough staff to work them.

Computer-Assisted Retrieval (CARS) with Microfilm or Fiche

Most news libraries, in microfilming clippings, have not opted for an automated or computer-assisted retrieval system along side their fiche or film. Clearly this is an added expense. However, we felt that, after five years of computer accessed clips online, our own staff would demand computer access. We also felt we could justify the expense through speed and accuracy of retrieval and by marketing the information to the public. Since each jacket of fiche must have a subject entry typed onto it, the keyboard entry of the same material would not be that much more labor intensive.

Optical Scanning and Disc Storage and Retrieval

During the spring of 1984, Clem Vitak, former *Baltimore Sun* librarian, made a suggestion to us about looking into the possibilities of Optical Disc Storage technology. Thus began a search for information on and people familiar with

the technology, as well as companies producing the equipment. What we found was a sizeable amount of information, several people who knew a great deal, and very few companies producing equipment for this "new" technology. In addition, virtually no one had completed projects that were being used daily, and no newspapers (as far as could be determined) were using optical storage technology at all. In a nutshell, we found a technology for microstorage and retrieval, which required less space than microfilm or fiche in its final storage and resulted in a reproduced image which was as good as and often better than the original. What we also found was new, untested equipment; young companies (two to three years old); and no one scanning material with the unique problems of newspaper libraries (unstandard size, inconsistent backgrounds, fragile papers, etc.). Despite all the negatives, we were completely and totally convinced of the value of the end result.

Intelligent Scanners

Lurking in the background was (and is) the possibility of using laser scanners that could be "taught" to read the character image and hence words. At first these Optical Character Reader (OCR) scanners looked intriguing. However, some preliminary investigation revealed that OCRs would not give us the image of the article, and we decided we would like to preserve that image. Also the OCR scanners were still not highly developed enough to read all the various kinds of type encountered in news articles, and

they often had trouble with bleed-through of type with newsprint paper.

The Optical Storage Technology: How it Works

Terminology

There is a great deal of jargon involved with this technology. What follows is a brief list of some of the terms used:

Optical disk is a sandwich-like disk similar to a phonograph record which is read and/or written by light. A disk may store video, audio, or digital data. It is made up of layers of photo-electric medium (such as Tellurium or Selenium) and air between glass. Disks come in various sizes—anywhere from 3½ inches and 5¼ inches to 12 inches, 14 inches, and 16 inches. In about three years, 2-inch disks and “floppy” optical disks may be available as well. The advantage to smaller disks and floppy disks is their user-friendliness and their low cost. (Chemical companies are now jumping into the market and experimenting with Polymer-based media, which will make the disks cheaper to produce.) The 12-inch rigid disks are preferred for this project.

A *cassette* or rigid plastic housing, is used to encase the disk, protect it, and store it. The disk remains in the cassette for recording or playing. Like a phonograph record, the disks are not erasable or re-writable. This *write once only* feature, as it is called, is changing, too. Erasable disks will eventually be an option. However, for preservation, the non-erasable disk is preferable.

There are three methods of writing: alloy, bubble, and pit. Pit appears to be the emerging standard method. The pit method involves the actual burning by a laser of a tiny pit into the photo-electric medium.

At present, the disks have guaranteed accuracy for 10 years. The life span is probably much longer (anywhere from 25 to 50 years or more), but no one really knows since no disks are that old. The 10 years means that the disks can be re-copied with complete accuracy at that

point. When one thinks about how quickly microfilm or fiche becomes scratched, 10 years of no scratches seems a favorable comparison.

A 12-inch disk holds approximately 1 gigabyte of information per side or 2 gigabytes per disk. 1 gigabyte = 1 billion bytes (characters) or roughly 40,000 pieces of 8½-by-11-inch paper. To give you a clearer comparison: One 12-inch disk will store an estimated 16 legal-size file drawers or 5.4 rolls of microfilm.

The figure of 40,000 pages per disk is derived by computing the following:

The number of bits needed to store the *black and white* in an average 8½-by-11-inch document is 4,000,000. At 8 bits to a byte, one page equals 500,000 bytes. By compressing at the standard compression ratio of 10:1, the page can be stored at 50,000 bytes per page. *Please note:* Not all vendors compress storage or compress at the same rate, hence one will see a variety of figures given for how much a disk will store.

Clippings contain a great deal of text and cannot be calculated at the same 50,000 bytes per page. Without a doubt, we will need more storage space than for the average 8½-by-11-inch documents.

Using our collection as a sample, we estimate that we can convert our 930 file drawers into approximately 60 to 70, 12-inch disks. Those file drawers now require about 1,000 square feet of floor space. The disks plus their storage unit/player would take about 10 square feet.

In order to play an optical disk and access the material on it, one needs a *disk drive*. A *disk drive* is the record player that plays the disk and retrieves the image. As the disk spins, the information is read with a low intensity flash of light from a laser diode. A PIT equals a low intensity reflection or Binary 0. No PIT equals a high intensity reflection or Binary 1.

Document scanners or optical scanners are those pieces of equipment used to convert the documents to digitized format. These scanners are similar to photocopiers in look and size. Resolution for the scanned document is usually at either 200 dots per inch or 400 dots per inch. Scan-

ning modes can be character or photographic, and paper feeding can be automatic or manual. Document size is usually 8½-by-11-inches, but can go up to 11 by 17 inches.

Since we expect to have 60 to 70 disks with information, we want several disk drives and a way of storing all the disks so they are accessible simultaneously. Hence the need for a *disk library* or *juke box*. The term *juke box* has been applied to these multi-disk storage libraries because the very first ones designed looked and functioned mechanically like a phonograph record juke box.

An Optical Scanning and Retrieval (OSAR) unit is the name of a juke box or storage/player unit manufactured by FileNet Corp. This unit writes disks as well as stores, retrieves, and plays them. The OSAR unit now comes in two sizes, one will store 64 disks, the other will store 200 disks. In addition, the OSAR stores the index to the system. Hitachi has developed a library unit juke box that will store and play about 30 disks. The Library of Congress optical disk project is using a juke box developed by Integrated Automation which houses 100 disks. Cygnet Systems, Inc., is developing an expandable robotic jukebox (add-on components) which has a maximum capacity of 141 disks. 3-M will be using a disk library developed by Toshiba which houses 100 disks.

The *access time* on most of these disk drives is approximately 10 to 15 seconds. *Access time* usually means the amount of time to move to a disk cartridge, select it, move it to a drive, and insert it in the drive for reading. Most manufactures advertise much faster times (9.9 seconds or 5.1 seconds); these are not user access times, but mechanical access times. The amount of time it takes the user to identify the correct image (or clips he/she wants) and display it on the screen is more difficult to establish. None of these estimates include the user's initial computer search time.

Systems integration, which is the coexisting with or integration of optical disk storage technology with current office

systems and document management systems, appears to be the trend that the American market is taking. As of 1986, a worldwide total of over 7,200 systems had been shipped to users; 5,500 of these were in Japan and were being used mostly for document image storage. (The technology has been a tremendous improvement for Japanese businesses because their written language is so visual and does not lend itself to typewritten material.) Approximately 1,500 of these systems have been shipped to the U.S. and Europe—most of them to systems integrators.

Advantages

Some of the initial advantages of optical-disk storage have probably become apparent by now.

1. Clearly the immense storage capacity and the space saving advantages are important for most of us.
2. Access speeds are not only very high but the materials can be accessed randomly. Just as one can open any drawer and pull out the specific envelope sought, the system can go to precisely that spot on the disk which contains the imaged envelope and put those clips on the VDT screen. The user can then browse through those clips as desired. In addition, if the text is too small, a zoom feature can enlarge any portion. With some software, the original computer search can be viewed on half the screen with the clippings on the other half. If one wanted the entire envelope of clips printed, it could be done without viewing them first.
3. An additional advantage over microfilm is the fact that there is no delay in developing or processing. As soon as material is scanned it is available for access.
4. The OSAR unit also permits simultaneous multiuser access. Two or more reporters can use the same envelope of clips at the same time. In our library, we would no longer

have to be concerned about passing clips from desk to desk or back and forth between floors. This is an important advantage for us since we serve two sets of newsroom staffs located on six different floors.

5. Security is yet another benefit. No more coffee spills, no more misfiles, no more missing envelopes. All stored data remains intact; it is impossible to inadvertently erase a data file or erroneously change data.
6. End product, however, is by far the most valuable advantage to optical disk storage. Because of different light densities of clippings, text is often lost in the photo process of microfilming. It doesn't make a great deal of sense to photograph something which, when later viewed on a screen or photocopied, is unreadable. Getting a good photo reproduction from microfilm is difficult. When clips are scanned and the image burned onto a disk, none of the original material is lost and often poorer clips can be enhanced. Small text can be enlarged and photographs come out as well as they appeared on the newsprint.

Disadvantages

1. Probably the greatest disadvantage at this point is cost. While the basic cost for converting a clipping collection to micro-storage is one of labor and therefore constant for microfilming or optical disk conversion, the additional cost of new technology equipment is certainly considerable. As production increases, the cost will come down. In 1986, an average 12-inch disk was \$475.00. That price has not yet dropped. The price of scanners, however, has dropped. Laser scanners can now be purchased for about \$2,000. The price of juke boxes seem to be remaining about the same, primarily because they are being manufactured per customer. Even so, there has been a dramatic increase in the number of compa-

nies manufacturing juke boxes. In 1984, there were a handful, and only three had products actually available in the U.S. By 1986, there were over 20 companies manufacturing storage libraries.

2. Untested equipment is another drawback. As librarians who serve the newspaper industry, we must supply on-the-spot service and often tomorrow is already too late. In the PNI Library, we serve two papers on a 24-hour basis; we need reliable equipment and local service bureaus on 24-hour repair call. Most of the present users of OSARs or similar storage libraries have not yet placed a high enough demand on the equipment to really *test it* nor have any of the OSARs been in service long enough to really identify their mechanical weaknesses.
3. A third problem seems to be availability. Some manufacturers are having difficulty meeting the demands for disks and drives.
4. A less serious disadvantage is that most of the large systems developed have been for corporate offices handling standard size forms of paper. No one has specifically considered the newspaper market, and, as was mentioned, clips are anything but standard in shape and size. The industry has recently developed large scale scanners for E-size engineering drawings. These scanners will scan 34-by-44-inch drawings, and we may be able to adapt these scanners to our needs.

Equipment Needed: How Much? How Many?

A configuration of equipment will vary depending on the company chosen. We project that we need the capacity to handle 1,000,000 clips per year, thus completing the project in about five years. The equipment needed would be as follows:

Image Management Station

- 1 OSAR (Optical Storage and Retrieval unit) with 2 optical disk drives (with possible expansion to 4)
- OSAR/index server with 150-Mb. Winchester disk
- OSAR/file server (functions as the "traffic cop")
- magnetic tape drive
- alpha-numeric terminal
- 2 12-inch laser disks (with additional disks added as the project progresses) to be stored in the OSAR

Document Entry Station—Library

- image terminal/workstation
- universal laser scanners (10 inches by 14 inches)
- document entry file server (mini-computer)
- (during the project we would need an additional 4 scanners, 1 of them being an engineering scanner, plus additional image/data entry terminals)

Document Retrieval Station—Library

- 1 alpha-numeric terminal
- 1 file server
- 1 print server
- 1 laser printer

Integrated Work Station—Inquirer

- 1 alpha-numeric terminal
- 1 file server

Integrated Work Station—Daily News

- 1 alpha-numeric terminal
- 1 file server

Software

- operating system (UNIX-based)
- document entry and indexing system
- document retrieval system
- communications emulation

The Actual Preservation Project: Step-by-Step

Preparation, or lack of preparation, of the clippings themselves affects the proj-

ect on both ends. The amount of time spent putting files in order before scanning will affect cost. Hunting for a clipping scanned (filed) with the wrong envelope of clips will also be time consuming and hence costly. It is our desire to have the clips in order by subject and date, whether we microfilm or scan them, because it makes the eventual retrieval process easier.

Preparation for scanning also involves finding an efficient method to relax the clips so they lie flat on the scanning screen without slipping. At this point in time, we have not decided what that efficient method will be. Most likely we will have to discover the answer through experimentation.

Once the clips are placed on the scanning surface in the order or position desired, all that is involved is pushing a button. When the scan has been completed, the operator can call up the image on the terminal to check for clarity.

The initial scan is stored on magnetic media. The actual writing of the disk will probably take place at the end of the day, when a batch of scans has been accumulated. The next step would be to re-fold the clips and insert them back into their envelopes in order to save them for donation to a receiving institution.

Data Entry would occur next. A frame number would be automatically assigned and the subject heading from the envelope entered. This subject heading could be held in a save key for envelopes with large numbers of clips. Cross references, which appear on the outside of envelopes, could be entered into the search program. One would also have the option of entering a series title when appropriate or desirable. At the completion of each workday, the scanned and magnetically stored images would be written on the disks for permanent storage.

The Final Product: Optical Clips

The end result will be the conversion of all the clipping files to laser disk storage. The clips would be retrieved by using a computer terminal at various lo-

cations (library, Inquirer newsroom, Daily News newsroom). Clips would be searchable by subject heading (as appeared on the original envelope) in a manner similar to the former file drawer system. In addition, date range and occasionally byline or headline searching would be possible.

These two systems are side by side systems: one being the stored laser disk and drive and one being the programmed search software. Once on the screen, a zoom feature could enlarge portions of the clipping. The searcher might be able to link into the front-end system or the library database and also have the capability of printing out whatever was on the computer screen as well as printing out batch requests.

Using the System; Justifying the Cost

The first question that comes to mind is "can a newspaper library afford to throw away its clips?" Certainly a loud *No* will go resounding through most buildings if the collection has any age or depth at all. Obviously, for our employers, we have to do something to preserve all this source material. Why not preserve with the best results?

Secondly, we have at our finger tips one of the most sought after sources of information. Historians, researchers, genealogists, lawyers, and any number of other users would be more than happy to pay access fees. In fact, the public library (not to mention journalism schools) may eventually want to buy copies of the entire set of disks. The

screen print or the batch print could possibly be telefaxed and thus made available for sale to those potential users who live at some distance. Donation of the original clippings to an appropriate institution can also be an alternative for offsetting cost.

A final cost saving suggestion for management is the potential use of the equipment and technology in other parts of the company once the library project is completed. The Personnel Department could begin storing daily on disk the records it presently microfiches. (Scanning can be done from film or fiche, so old records could also be converted.) The Accounting Department could store billing records and journal entries. The Credit Department, which needs visual copies of credit applications or circulation bills, could begin scanning those files. There is potential use throughout a corporation for optical technology. Accounting departments could do the same.

Conclusion

This article was intended to give an overview of this technology, to demonstrate some of its potential, and to describe our proposal for preserving the PNI Library clipping collection. While not claiming to be experts in this field, it is our belief that optical disk storage will support, contribute to, and become a dominant force for excellence in the world of information.

This paper was presented at the 1986 SLA Annual Conference in Boston, Massachusetts.



Mary Jo Crowley is the library manager for Philadelphia Newspapers, Inc. The library provides service to the newsrooms of both *The Philadelphia Inquirer* and the *Philadelphia Daily News*, as well as all departments of the parent corporation.

On the Scene

1988 Candidates for SLA Office

For President-Elect



EDWINA H. PANCAKE



MURIEL REGAN

● EDWINA H. (DIDI) PANCAKE is director of the Science and Engineering Library at the University of Virginia, Charlottesville, Va.

Past Employment: information specialist (1969-73); acting director, Science/Technology Information Center, University of Virginia (1973-74).

Education: B.S. (biology), Baylor University (1967); M.L.S., University of Texas at Austin (1969).

SLA Member Since: 1969.

SLA Chapter Activities: *Virginia Chapter:* chair, Public Relations Committee (1970-71); editor, *VASLA Bulletin* (1971-73, 1975-76, 1987-88); president-elect (1973-74); president (1974-75); chair, Nominating Committee (1978-79); Membership Committee (1979-80).

SLA Division Activities: *Information Technology Division:* member. *Library Management Division:* member. *Publishing Division:* member. *Science-Technology Division:* chair, Membership

Committee (1976-77); chair-elect of division (1977-78); chair of division (1978-79).

SLA Association-level Activities: chair, Joint Cabinets Study Committee on Subject-Oriented Groups (1974-75); Chapter Cabinet chair-elect (1979-80); Chapter Cabinet chair (1980-81); chair, 1983 New Orleans Conference Program Committee (1981-83); Chapter Cabinet chair (1983-84); director (1985-88); secretary, Board of Directors (1985-86); chair, Special Committee on Association Structure (1986-88); secretary, Board of Directors (1987-88).

Other Professional Memberships: Virginia Library Association: chairman, Nominating Committee (1976-77). Virginia Microfilm Association (1970-73): secretary/treasurer (1970-71), member, executive board (1971-73).

Honors: NDEA Fellowship in Library Science (1967-68).

Publications: *Index to VASLA Bulletin 1971-1976; Index to VASLA Bulletin 1976-1981.*

● MURIEL REGAN is a principal and co-founder of Gossage Regan Associates, Inc., in New York City.

Past Employment: librarian, The Rockefeller Foundation (1956–65, 1967–82); librarian, Booz Allen & Hamilton (1966–67); deputy chief librarian, Borough of Manhattan Community College, City University of New York (1965–66); researcher, P.F. Collier (1954–56); librarian, U.S. Army (1953–54).

Education: B.A., Hunter College; M.L.S., Columbia University; M.B.A., Pace University.

SLA Member Since: 1956.

SLA Chapter Activities: *New York Chapter:* chair, Nominating Committee (1981–82); president-elect/president (1978–80); treasurer (1975–78); chair-elect/chair, Social Science Group (1974–76); chair, Union List Revision Committee (1972–74).

SLA Division Activities: *Social Science Division:* International Affairs Section, Nominating Committee (1984–85); chair-elect/chair (1977–79); editor, *Social Science Division Bulletin* (1974–77).

SLA Association-level Activities: treasurer (1982–88); chair, Finance Committee (1982–88); member, Board of Directors (1982–88); member, Association Office Operations Committee (1982–88); member, Long-Range Planning Committee (1984–88); SLA representative to Council of National Library &

Information Associations (1987–88); SLA representative to ALA Study Group on the Accreditation Process (1985–86); SLA representative to AAP Committee on Electronic Publishing (1983–85); member, Education Committee (1979–81); chair (1978–79); member, 1977 SLA Annual Conference Committee.

Other Professional Activities: Archons of Colophon, secretary/treasurer (1986–88); New York Metropolitan Reference and Research Agency lecturer on automation (1986–87); consultant, METRO Union List of Serials Project (1984–85); INTERSHARE project coordinator (1982–84); consultant on organizing, reorganizing, and automating special libraries (1980–).

Other Professional Memberships and Honors: American Library Association; American Society for Information Science; Association of Information Managers; New York Library Association; New York Library Club; Archons of Colophon; Phi Beta Kappa; Who's Who Among American Women.

Publications: Ms. Regan has edited one book and authored one research report, five articles in *Special Libraries*, and three articles in other professional journals. Her most recent publications include "Librarians & Libraries in the 1990's: Gloom and Doom, or Fame and a Different Game," *Special Libraries* 78 (no. 4); "Library Consulting: Challenge, Autonomy and Risk," *The Reference Librarian* (in press); "Personnel Needs on the Job," *Unabashed Librarian*.

For Treasurer



CATHERINE A. JONES



JAMES L. OLSEN, JR.

● CATHERINE A. JONES is chief, Congressional Reference Division, Congressional Research Service, The Library of Congress, Washington, D.C.

Past Employment: assistant university librarian for Reader Services, George Washington University; associate director, American Library Association; chief reference librarian, Executive Office of the President, Office of Management and Budget Library.

Education: B.A., University of Alabama (1965); M.L.S., Catholic University of America (1969); M.A. in Government, George Washington University (1980).

SLA Member Since: 1970.

SLA Chapter Activities: *Washington, D.C., Chapter:* Hospitality Committee (1978); chair, Hospitality Committee (1979); president-elect/program chair (1980-81); president (1981-82); chair, Chapter Nominating Committee (1983); member, Social Sciences and Newspaper Sections; member, Long-Range Planning Committee (1985-).

SLA Division Activities: *Newspaper Division:* co-chair, Extra-Divisional Activities Committee (1985-86); chair, Student Stipend Award (1987); member, Awards Committee (1988). *Library Management Division:* member.

SLA Association-level Activities: chair, Government Relations Committee (1982-87); member, Government Relations Committee (1987-); member, Nominating Committee (1982); member, Planning Committee, First State of the Art Institute, "Government Information: An Endangered Resource of the Electronic Age" (1986); recipient, SLA President's Award (1987); member, Finance Committee (1987-); member, Ad Hoc Committee on Depository Library Access to Federal Automated Data Bases (1987-); Government Relations Update (1982-87).

Other Professional Memberships and Activities: District of Columbia Library Association: assistant treasurer (1972), president-elect/program chair (1975-76), president, (1976-77); president, Catholic University Library School Alumni Association (1979); member, Federal Library and Information Center Committee, Education Committee (1987-); participant, White House Conference on Libraries and Information Science (1979); adjunct faculty, Catholic University of America School of Library and Information Science (1983-); participant, Federal Executives Institute, Office of Personnel Management (1984).

● **JAMES L. OLSEN, JR.**, retired in 1986 from his position as librarian at the National Acad-

emy of Sciences and the National Academy of Engineering in Washington, D.C.

Past Employment: preparations librarian, Johns Hopkins University, Applied Physics Laboratory (1951-53); head, Document Services Unit, Science Information Dept., Smith, Kline and French Labs (1953-61); resident consultant, Herner & Co. (1961-62).

Education: B.A., University of Maryland (1951).

SLA Member Since: 1952.

SLA Chapter Activities: *Washington, D.C., Chapter:* 2nd vice-president (1963-64); associate editor, *Chapter Notes* (1964-65); chair, Recruitment Committee (1964-65); director (1966-68); business manager, *Chapter Directory and Handbook* (1966); chapter auditor (1970); chair, Committee on Interlibrary Cooperation (1971); chair, Elections Committee (1972); director (1975-77); and president (1978-79).

SLA Division Activities: *Pharmaceutical Division:* chair (1957-58). *Science-Technology Division:* chair, Elections Committee (1956); chair, Nominations Committee (1973); member, Committee on Projects Evaluation and Development (1974-75); contributing reviewer, *Sci-Tech News* (1975-77). *Information-Technology Division:* chair (1980-81). *Library Management Division:* chair, Human Resources Section (1983-84).

SLA Association-level Activities: president's *ad hoc* representative to the Committee on Specialized Cataloging, Council on National Library and Information Associations (1979-80); member, Education Committee (1981-84).

Other Professional Memberships: American Society for Information Science (1955-84); consulting editor, *Journal of the American Society for Information Science* (1975-77); member, Public Affairs Committee (1979-81); member, Education Committee (1982-84).

Publications: Mr. Olsen is the author of "Unlocking the Library's Market—Seven Keys," in *Special Librarianship—A New Reader*, edited by Eugene B. Jackson (Scarecrow Press, 1980).

For Chapter Cabinet Chair-Elect



**CYNTHIA R.
SOWARDS MITCHELL**

● **CYNTHIA R. SOWARDS MITCHELL** is president of Mitchell Information Services in Dallas, Tex.

Past Employment: reference librarian, Richland College Library, Dallas County Community College District (1976–80); corporate librarian, Purvin & Gertz, Inc. (1980–85); director of research, Russell Reynolds Associates, Inc. (1985–86).

Education: B.A., University of Texas at Arlington (1975); M.L.S., North Texas State University (1976).

SLA Member Since: 1979.

SLA Chapter Activities: *Texas Chapter:* member, Long-Range Planning Committee (1981–82); chair, Dallas Local Planning Group (1981–82); chair, Long-Range Planning Committee (1982–83); chair, Employment Committee (1983–84); president-elect/program chair (1984–85); president (1985–86); president (1986–87); past president/chair, Nominating Committee (1987–88).

SLA Division Activities: *Petroleum & Energy Resources Division:* bulletin reporter; Ad Hoc Committee on Energy Publications.

SLA Association-level Activities: Joint Cabinet Committee on Promotional Materials.

Other Professional Activities: member, North East Texas Online Users Group; member, Task Force on Copyright Law, Dallas County Community College District (1979).



MARLENE TEBO

Other Professional Memberships and Honors: member, Association of Women Entrepreneurs of Dallas; assistant treasurer, Professional Members League of the Dallas Museum of Art.

Publications: two.

● **MARLENE TEBO** is head of the Physical Sciences Library at the University of California at Davis.

Past Employment: science bibliographer, State University of New York at Binghamton (1966–69); technical librarian, Xerox Corporation (1969–75); technical librarian, The MITRE Corporation (1975–79); assistant director for sciences, State University of New York at Binghamton (1979–84).

Education: University of Goettingen, West Germany (1956–57); B.S. (chemistry), Michigan State University (1959); M.S.L.S., Drexel University (1965); SLA Middle Management Institute (1984).

SLA Member Since: 1964.

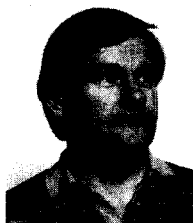
SLA Chapter Activities: *Upstate New York Chapter* (1966–75; 1979–84): Nominating Committee (1982–84); chair (1983–84). *Washington, D.C., Chapter* (1975–79): Committee on ILL Concerns (1976–77). *Sierra Nevada Chapter:* member (1984–); director of education (1985–86); vice-president (1986–87); president (1987–88).

SLA Division Activities: *Environmental Information Division:* chair-elect (1979–80); chair (1980–81); membership chair (1980–81).

SLA Association-level Activities: Positive Action Committee (1986–); chair (1986–87).

Other Professional Memberships: American Library Association, California Library Association, Association of College and Research Libraries, California Academic and Research Librarians.

For Division Cabinet Chair-Elect



ROGER HALEY



BETH M. PASKOFF

● **ROGER HALEY** is librarian of the United States Senate Library in Washington, D.C.

Past Employment: reference assistant, United States Senate Library (1964-71); assistant librarian, United States Senate Library (1971-73).

Education: B.A., Georgetown University (1960); M.L.S., University of Maryland (1976).

SLA Member Since: 1976.

SLA Chapter Activities: *Washington, D.C., Chapter:* member; chair, Government Relations Committee (1987-88).

SLA Division Activities: *Social Science Division:* chair-elect (1978-79); chair, Legislative Reference Section (1979-80); division chair-elect (1983-84); chair (1984-85); chair, Nominating Committee; chair, Bylaws Committee; secretary/treasurer, Women's Resources and Concerns Section (1985-86). *Library Management Division:* member. *Information Technology Division:* member.

SLA Association-level Activities: member, Bylaws Committee.

● **BETH M. PASKOFF** is an instructor at the School of Library and Information Science, Louisiana State University.

Past Employment: science bibliographer, LSU (1978-87); reference librarian, LSU (1977-78); chief librarian, Veterans Administration Hospital (1974-76); assistant medical librarian, Washington (D.C.) Hospital Center (1972-74).

Education: doctoral student, Florida State University (1986-); M.L.A., Johns Hopkins University (1977); M.L.S., SUNY at Albany (1972); B.S. (Biology), SUNY at Stony Brook (1971).

SLA Member Since: 1972.

SLA Chapter Activities: *Florida Chapter:* Tallahassee Area Regional Coordinator (1986-87). *Louisiana Chapter:* Career Guidance Committee Chair (1987-88); president (1985-86); president-elect (1984-85); director (1982-84); bulletin editor (1982-84).

SLA Division Activities: *Biological Sciences Division:* chair (1986-87); chair-elect (1985-86); membership chair (1983-84); local arrangements chair (1982-84). *Business & Finance Division:* member. *Science & Technology Division:* member.

SLA Association-level Activities: Student Relations Officer (1987-89); Networking Committee (1986-89); Membership Records Committee (1986-88); Joint Cabinet Committee on Chapter/Division Financial Issues (1985).

Other Professional Activities: American Library Association; Association for Library & Information Science Education, membership chair (1987-88); Louisiana Library Association, State Agencies Interest Group chair (1985-86), Collection Development Interest Group chair (1981-83, 1984-85); Medical Library Association.

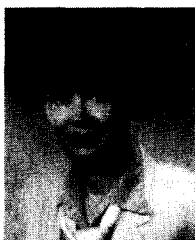
Honors: ISI/SLA Scholarship (1986); Graduate Teaching Fellowship, Florida State University (1986); Outstanding Young Women of America (1982); Superior Performance Award, Veterans Administration (1976).

Publications: Ms. Paskoff has authored one chapter in a book, five articles in journals, and

six articles in SLA chapter and division publications. Her most recent publications include: "Networking and Special Libraries" in *Proceedings of the 12th Annual IAMSJIC Conference*

(1987); "Health Sciences" in *Selection of Library Materials: Guide to Sources and Strategies* (ALA, 1987); and "Adult Services in the Sciences," *RQ* (1985).

For Directors (1988-91)



CAROL A. DRUM



CYNTHIA STEINKE



ANN W. TALCOTT



GLORIA J. ZAMORA

● **CAROL A. DRUM** is the chemistry librarian and head of the Central Science Library at the University of Florida, in Gainesville, Fla.

Past Employment: literature chemist, Lorillard Corporation (1970-71); literature chemist, Technical Information Center, Celanese Fibers Company (1969-70); laboratory technician, Fibers Industries, Inc. (1967-69); chemist, Collins & Aikman Corp. (1965-67).

Education: A.A., Lees-McRae Junior College; B.A., Texas Christian University; M.L.S., North Texas State University.

SLA Member Since: 1971.

SLA Chapter Activities: *Florida Chapter:* president-elect, president, past president (1985-88); chair, Government Relations Committee (1984-85); chair, Publicity Committee (1981-82); bulletin editor (1980-81); chair, Nomination Committee (1979-80); treasurer (1977-79).

SLA Division Activities: *Chemistry Division:* chair, Nomination Committee (1981-82); chair-elect/chair (1979-81). *Library Management Division:* chair, Public Relations Committee (1982-83).

SLA Association-level Activities: Membership Growth Committee (1987-88); Scholarship Committee (1983-86), chair (1985-86); SLA 74th Annual Conference Program Planning Committee (1981-83).

Other Professional Activities: American Chemical Society, Division of Chemical Information; Library Educational Committee (1983-84); Florida Chapter, Gainesville Subsection, secretary/treasurer (1979-80). United Faculty of Florida, University of Florida Chapter, membership chair (1979-80); secretary (1978-79).

Other Professional Memberships: American Chemical Society; American Association of University Women; United Faculty of Florida.

Publications: "Advances in Heterocyclic Chemistry: Prospect and Retrospect," coauthored with Alan Katritzky, *Advances in Heterocyclic Chemistry* 40: 175-198 (1986); "Review Literature of Heterocycles," coauthored with Alan Katritzky, *Comprehensive Heterocyclic Chemistry* 1: 47-82 (1984); *Guide to Academic Libraries in the United States for Students of English as a Second Language*, coauthored with Patricia Byrd and Barbara J. Wittkopf, Englewood Cliffs, New Jersey: Prentice-Hall, 1981.

● CYNTHIA STEINKE is director of the Institute of Technology Libraries at the University of Minnesota, Minneapolis, Minn.

Past Employment: science and engineering librarian, University of Illinois at Chicago (1970-84); science librarian, The John Crerar Library (1966-70).

Education: University of Paris—The Sorbonne (1957-58); B.S., Michigan State University (1959); M.S.L.S., University of Illinois at Urbana (1966), Beta Phi Mu.

SLA Member Since: 1966.

SLA Chapter Activities: *Illinois Chapter:* Mailing Committee (1966-67); Hospitality (1967-68); Archivist (1968-70); Membership Directory (1972-73); chair (1976-77, 1977-78); 1975 Annual Conference Committee (1973-75), including chair, Printing Committee (responsible for inaugurating the production of Contributed Papers in microfiche format); Program Committee (1978-79); director (1979-81); chair, Jobline of Illinois (1980-81); consultation officer (1981-82); president-elect (1982-83); president (1983-84). *Minnesota Chapter:* director (1987-88).

SLA Division Activities: *Science-Technology Division:* treasurer (1976-78); chair-elect (1980-81); chair (1981-82); chair, Nominating Committee (1983-84); chair, Awards Committee (1985-86). *Library Management Division:* bulletin columnist, "Management Research Highlights" (1978-79).

SLA Association-level Activities: member, Publisher Relations Committee (1984-86); SLA representative to the IFLA Science and Technology Section (1986-87).

Professional Memberships: American Library Association, American Association for the Advancement of Science, American Society for Engineering Education, American Society for Information Science. She has served on a variety of committees and projects for these organizations.

Publications: Ms. Steinke contributes to *Sci-Tech News*, *Science and Technology Libraries*, *American Reference Books Annual*. Published works include articles and reports on industry standards and specifications, sci-tech reference books and publishing. "Seventy-Five Years of Sci-Tech Reference: What's Next?", *Science and Technology Libraries* 5 (no. 4) (summer

1985). Serves as consultant on planning for new sci-tech libraries and for sci-tech reference book publishing.

● ANN W. TALCOTT is a self-employed library management consultant.

Past Employment: library network support manager, AT&T Bell Laboratories (1986); market and executive information services manager, AT&T-BL (1985-86); Murray Hill & Short Hills library manager, AT&T-BL (1976-85); group supervisor, Library & Services to Western Electric, AT&T-BL (1970-76); reference librarian, AT&T-BL (1969-70); cataloger, Alderman Library, University of Virginia (1968-69).

Education: B.A., Vanderbilt University (1967); M.A. (library science), University of Michigan (1968); Certificate in Management, Smith Management Program, Smith College (1985).

SLA Member Since: 1969.

SLA Chapter Activities: *New Jersey Chapter:* past-president (1983-84); president (1982-83); first vice-president (1981-82); secretary (1979-81); chair, Awards Committee (1984-85, 1986-87); chair, Finance Committee (1977-79); chair, Nominating Committee (1985-86); NJSLA 50th Anniversary Committee (1984-85). *Illinois Chapter:* member (1969-76).

SLA Division Activities: *Library Management Division:* chair (1987-88); chair-elect (1986-87); chair, 1986 Program Committee, Boston Conference (1984-86). *Information Technology Division:* member.

SLA Association-level Activities: Ad Hoc Committee on Public Relations (1982-84); Membership Records Committee (1986-); President's Task Force on the Value of the Information Professional (1986-87); H. W. Wilson Award Committee (1986-88).

Other Professional Memberships: American Society for Information Science, American Library Association, Library & Administrative Management Association, Resources & Technical Services Division.

Honors: Beta Phi Mu; listed in *Who's Who of American Women*.

Publications: In addition to many articles in SLA chapter and division bulletins, Ms. Talcott has published seven papers of which the following are the most recent: "A Case Study in Adding Intellectual Value: The Executive Information Service," *Report of the President's Task Force on the Value of the Information Professional*, SLA, June 1987; "Read Between the Lines," *Library Journal* 112 (no. 5): 61 (March 15, 1987); "Managing Electronic Libraries," *Managing the Electronic Library*, M. E. D. Koenig, ed., New York: SLA, 1983; "Is Journal Selection Done By Magic?," *Information Reports and Bibliographies* 10 (no. 6): 8-11 (1981).

● GLORIA J. ZAMORA is a management information specialist for the Management Staff organization at Sandia National Laboratories in Albuquerque, N.Mex.

Past Employment: technical information specialist, Sandia National Laboratories (1980-83); reference librarian, Air Force Weapons Laboratory (1976-80).

Education: B.A., University of Michigan (1975); A.M.L.S., University of Michigan (1976).

SLA Member Since: 1977.

SLA Chapter Activities: *Rio Grande Chapter:* bulletin editor (1978-79); president-elect (1979-80); president (1980-81); special proj-

ects chair, Fun Run Committee (1983-84); chair, Bylaws Committee (1985); NTIS liaison (1983-86); government relations chair (1985-88). She chaired the Rio Grande Chapter's 30th anniversary project committee. The project was co-sponsorship of the American Translator's Association annual meeting in October 1987.

SLA Division Activities: *Information Technology Division:* member. *Science-Technology Division:* member.

SLA Association-level Activities: Positive Action Program for Minority Groups Committee (1982-85), chair (1984-85); Nominating Committee (1985-86).

Other Professional Activities: New Mexico Library Association: chairman-elect and chair, Online Roundtable (1982-84); chair, publications committee. New Mexico State Librarian to the Continuing Library Education Advisory Council as the representative from Special Libraries (1981-85). Served on the Women's Program Committee at Sandia National Laboratories (1983-84).

Honors: Librarian of the Year, presented by Sigma Xi, The Scientific Research Society, New Mexico Chapter (1984); Young Career Woman of New Mexico Award, presented by the National Federation of Business and Professional Women (1981); regional finalist for a White House Fellowship (1984).

Publications: Ms. Zamora has co-authored several articles, which appeared in library journals, and edited the proceedings of a conference on conference literature.

SLA Interviews Anne Mathews

Elaine Hill

Anne Mathews has served as the director of Library Programs for the Office of Educational Research and Improvement at the U.S. Department of Education since 1986. Ms. Mathews is actively dedicated to the information profession and has been included in Who's Who in Library and Information Services. Her exceptional professional background includes experience as an information consultant, a director of continuing education and professor at the Graduate School of Librarianship and Information Management at the University of Denver, program director of the Central Colorado Library System, as well as other prominent positions in the information profession. She is a consultant to the U.S. Information Agency and the U.S. Agency for International Development, and is currently serving on The Book and Library Advisory Committee for the U.S. Information Agency. She has authored numerous technical reports and articles, as well as the book Communicate: Librarian's Guide to Interpersonal Relations.

On July 15, 1987, I had the pleasure of meeting with Ms. Mathews to discuss the role of Library Programs on the information profession. The following comments reflect Ms. Mathews' own views and not necessarily those of the U.S. Department of Education.

EH: As director of Library Programs for the Office of Educational Research and Improvement at the Department of Education, how would you define the role of Library Programs?

AM: Library Programs administers nine grant programs, which are authorized by two laws: the Library Services and Construction Act (LSCA), and the Higher Education Act (HEA). Through these initiatives, Library Programs serves almost all types of libraries, helping to

improve library services throughout the nation. Library Program's support is used to provide seed money for innovative and/or experimental programs, assist literacy projects, encourage the development of services to disadvantaged populations, provide financial incentives to libraries to share resources, and conduct evaluations and research on library issues.

Although the federal monies account for only about four percent of library support, these funds have been a major stimulus for the development of libraries and library services in this country. For this reason, Library Programs must be intellectually, as well as financially, responsible for the quality and usefulness of the projects funded.

Library Programs is one of five program offices under the Office of Educational Research and Improvement (OERI). The total OERI budget for 1987 was around \$200 million, of which \$132.5 million was for Library Programs—approximately 70 percent of the OERI budget.

EH: How are Library Programs' initiatives accomplished?

AM: Library Programs' administrative librarians work in close contact with state LSCA coordinators, reviewing and advising on annual state plans and long-range plans.

Three of the programs (Title I—Library Services; Title II—Public Library Construction; and Title III—Inter-Library Cooperation) make formula-based awards to state libraries. The other pro-

grams award grants on a competitive basis: HEA Title II-B, Library Career Training; HEA Title II-B, Library Research and Demonstration; HEA Title II-C, Strengthening Research Library Resources; LSCA Title-IV, Services to Indian Tribes and Hawaiian Natives; and LSCA Title-VI, Library Literacy Programs.

Under LSCA Titles I, II, and III, state libraries submit an annual plan indicating their priorities for the coming year. Based on their needs assessment, they may wish to put money into programs for the aging, or into literacy programs, or into programs which help those who are institutionalized or physically handicapped. All these categories are mandated by Congress as being areas where there is greatest need. While we don't tell states how they must spend their money, the LP professional staff offers suggestions on a myriad of projects. Each of the LSCA administrative librarians has an M.L.S. and a subject speciality in such areas as community information referral centers; services to the elderly, the disadvantaged, and the handicapped; and literacy programs. Each year the administrative librarians produce reports on national trends and issues. We are bringing these reports out as a book in early 1988.

The Library Development Staff project managers prepare guidelines, develop regulations, visit projects, and choose panel reviewers, etc. for the discretionary programs. The librarians who administer the HEA titles work closely with university grant project coordinators, advising on project plans and assuring that funds are efficiently utilized.

EH: What other responsibilities does Library Programs undertake?

AM: One focus of the program for the past year-and-a-half has been on library research and data gathering. There is a need for basic research in many areas of librarianship and there is also a need to improve the quality and the type of research currently being done. We are conducting an exciting project entitled "Issues in Library Research: Proposals for



Anne Mathews, director of Library Programs, Office of Educational Research and Improvement, U.S. Department of Education.

the 90's." This project will assist in identifying areas where future research would be fruitful.

We have also been attacking the problem of the lack of consistent statistical data available for all types of libraries. Library Programs hired a senior research associate for the summer, whose task was to prepare a plan to address the need for collecting data about public, special, university, and other types of libraries. This plan will help us to identify what has been gathered in the past, what seems to be lacking in the national library database, and what questions need to be answered. We are cooperating with the Center for Educational Statistics in collecting the data.

A third responsibility is leadership. The federal office of Library Programs needs to make recommendations to the Secretary of Education on what needs to be done to improve library services, as well as make suggestions to members of the library public. I work closely with the Chiefs of State Library Agencies

(COSLA) and the National Governor's Association (NGA), and Library Programs is cooperating with the Education Commission of the States (ECS) on a national literacy survey. Many governors have appointed assistants. We have been contacting the state librarians and suggesting that they maintain contact on the state level with the governors' educational assistant, in order to better describe and define the role of libraries. Each state has a unique and different library program; in fact, we have identified over 3,500 discrete programs within the states that are funded through LSCA or HEA funds. I think we can exercise leadership by suggesting activities and programs. I also think we need to bridge the gap between what researchers and educators need to know and how they find these things out, as well as how it can be disseminated to practitioners. As we concentrate on the changes taking place in society and we think about what leadership really means, I'd like to see all libraries provide the kind of services that will make them indispensable.

EH: How does Library Programs improve library education?

AM: Library Programs has had a very direct and important influence on library education through the HEA II-B Library Careers Program. Through that program, \$660,000 a year is used to fund fellowships for advanced study, institutes, and other training seminars to upgrade library skills. These projects have been very successful in bringing newly trained professionals into the field, as well as in teaching experienced librarians new skills. Recent institutes have trained rural librarians in basic library skills, taught university librarians Chinese cataloging skills, and introduced new technologies to public librarians.

Fellowship funds for master's and doctoral-level study are available to interested individuals who apply to universities that have been granted these training funds. Library schools compete for funds for master's or doctoral fellowships. This program is now in its 21st

year, and the II-B program has encouraged people from diverse backgrounds to enter the profession and to specialize in areas such as children's services, management and administration, cataloging, technology, law librarianship, etc. The research money has been used for application and demonstration projects, as well as addressing philosophical and "cutting edge" questions.

EH: How does Library Programs help to strengthen and improve libraries and library resources?

AM: The Library Service and Construction Act was first funded in 1956. During the past 30 years, these funds have improved the quality of library services to disadvantaged populations—non-English speaking, disadvantaged, institutionalized, illiterate, handicapped, etc. Libraries are now reaching about 96 percent of the population and efforts continue to get our library resources into the hands of these people.

Through the Higher Education Act, we have provided fellowships, institutes, and research opportunities, and we have developed some cutting edge research projects. For example, 20 years ago LSCA and HEA research money helped fund the Ohio College Library Center (OCLC) in its first efforts. Library Programs money has been used as seed money to start a number of projects. One of the first projects that we funded was bookmobiles to rural areas. Many states have long since abandoned bookmobiles as not being economically or otherwise feasible, but bookmobiles were an LSCA demonstration project. Storefront libraries in the 60's—(public library outreach programs through small storefronts in ethnic communities)—were also LSCA funded. Innovative efforts were made to reach groups that could not have been reached through local funding. There has also been an emphasis on interlibrary resource sharing projects.

EH: How does Library Programs benefit special libraries and information centers?

AM: Library Programs provides fund-

ing and opportunities for all kinds of libraries and information centers. For example, any public or private agency or organization can apply for funding to conduct an institute or to conduct research, either in response to specific Requests for Proposal or field-initiated projects.

Any library or private research library agency or organization may also apply for funds to help major research libraries maintain and strengthen their collections; these collections are essential to scholarship and research on a nationwide and worldwide basis. The funding also assists in making their holdings available to individual researchers and scholars—and to other libraries whose users have need for such material. The LSCA Title III funds are used to tie all libraries together to share resources.

EH: How does Library Programs impact special librarians and information professionals?

AM: Special librarians are free to apply to any of the Higher Education Act (HEA) or LSCA Title III programs. For example, we offer fellowships in Library Career Training for individuals working towards an M.L.S. or doctoral degree. We also fund institutes for information professionals on specific issues and concerns. These institutes have attracted many special librarians. We utilize special librarians as peer reviewers for potential grant projects and as panel reviewers. State libraries also use special librarians to participate in LSCA advisory councils. We encourage members of SLA to send us their resumes for inclusion in our databank of reviewers.

EH: What are some activities and programs that Library Programs initiated or participated in during 1987?

AM: Our biggest effort in 1987 was the Research Agenda for the '90s, which I mentioned earlier. In part I of the project, four meetings were held in which respected librarians, educators, policy makers, and others brainstormed to identify issues and problems that libraries

will face as they enter the 21st century. Part II consisted of grouping these issues into 10 major topics and commissioning essays to expand upon these ideas. The commissioned papers have been peer-reviewed by panels of librarians and scholars. These essays will be combined into a book, to be published in 1988. Also included in the book will be a chapter summarizing the international teleconferences in which the opinions of foreign librarians will be solicited. Library Programs plans to continue this effort in FY 1989 with the preparation of Requests for Proposals based upon the research agenda developed through this project.

We were also involved in an exciting program called "Leaders Are Readers." President Reagan declared 1987 as the "Year of the Reader." It was also the Bicentennial of the Constitution. Since our office works closely with the Library of Congress, we decided to co-sponsor a program with them. The core of the program was an informal seminar with Secretary of Education William Bennett, Librarian of Congress James Billington, and other prominent leaders. The purpose of the seminar was to provide these two national education leaders an opportunity to discuss the influence of books and reading on the creation of our democracy, to share with the audience how books and reading have affected their own personal lives and career, and to encourage those present to look to books for ideas and information to prepare themselves for life and leadership.

Another major activity has been a concerted effort to establish stronger contacts with other associations and professionals in the library field.

We have also tried to upgrade professionalism within Library Programs. We have initiated a staff development program, and have encouraged all of our staff to take computer training, as well as time management, stress management, and other courses which are available through the Department of Education. In collaboration with the Center for Educational Statistics, we are conducting a Fast Response Survey (FRSS), which is the first national effort to study the kinds

of services provided to young adults through libraries.

Due to our emphasis on literacy and contact with the ECS, the ECS survey on literacy, which was conducted during summer '87, contains a section on libraries and the use of libraries in literacy activities. This is one example of how we have been able to tie in our program efforts with other groups that share similar concerns. We are also working with other groups, such as the American Council on Education and the National Science Foundation, on projects of mutual concern.

This year we have analyzed the programs that are funded with LSCA and HEA monies. We are developing a computer program that will help us to identify any of the subject areas where there is federal library money. For example, if we want to find out if there are library programs for the aging in nursing homes, we will be able to find out what states have nursing home programs and how the library nursing home programs operate in each state. Or if we want to find out what special libraries are involved in Title III "Sharing Resources" activities or what committees special librarians serve on, we will be able to get that information from the computer. This database has just been started, and I hope that we will be able to complete it in 1988.

Library Programs has also been working with the American Library Association and the National Commission on Libraries and Information Science on a "Campaign for Libraries" in order to ensure that, in the words of Secretary of Education William Bennett, "by the end of the 1988-89 school year, every child should have a library card—and use it." State libraries are supporting this initiative with LSCA and state funding.

EH: If funding were to increase, where is the greatest need for additional monies?

AM: Definitely in research and data gathering. We have only a million dollars right now and if we could raise it to five million dollars, I think we could make an enormous impact on library research and training. We'd like to see more scholarships and fellowships available for peo-

ple to get their master's or their doctoral degrees. In 1987 we asked the field to initiate a request for research money for the first time in almost a decade. In response to the notice in the Federal Register that we were inviting proposals (field-initiated research), we received requests that totaled more than \$4.4 million dollars. We had announced that we were going to give three to five awards of approximately \$60,000 each, but, if there were three outstanding ones totalling \$100,000, we could consider these. We alerted people to the fact that there was approximately \$300,000. But the proposals we received for both research and demonstration indicated to us that there is an enormous amount of interest in doing research in the field; there just is not enough money to support it.

EH: What new activities and programs has Library Programs planned for 1988?

AM: We will continue the project on future issues of concern to libraries into the 1990s. One of the aspects of our research project is co-sponsorship with the United States Information Agency for a World Net teleconference by satellite to downlinks in Europe and parts of South America. Scholars, librarians, and educators abroad are very interested in information issues as we see them in the United States, and they'd like to add their input. We will be having one or more broadcasts with a few of our experts in the USIA studio in Washington talking about information issues, the use of technology in libraries, problems in information delivery, and issues in library education. There will be a panel in the studio overseas and we will have a dialogue about international information needs. The conversation evoked from these discussions will be incorporated into one more chapter in the book that we are writing about the issues.

We will continue with our research and statistics activities. An exciting research project funded through HEA II-B is an investigation of what makes a good library. We encourage members of the Special Libraries Association to partici-

pate in research activities both at their state level and through national competitions.

EH: Is there anything that you'd like to add?

AM: I think that it's an exciting time to be in this profession. There is a need for information in order to answer the

many questions which come with changes in society and with new technologies. Librarians have the skills, the training, and the resources to meet these new challenges and to provide services to clients that will really make a difference.

Elaine Hill is editor of *Special Libraries*.

The Challenge to Change:

A Discussion on the *President's Task Force on the Value of the Information Professional*

David C. Beveridge

The following article discusses the SLA report compiled by the President's Task Force on the Value of the Information Professional. The Task Force, created in 1986, was charged with investigating approaches to determining the value of information and the value of the information professional. Chaired by James M. Matarazzo, the Task Force included Miriam A. Drake, Helen Manning, Ann W. Talcott, James B. Tchobanoff, and Allen B. Veaner. All citations in the following article refer to quotes and articles included in the Task Force report. For copies of the report, contact: Special Libraries Association, Order Department, 1700 Eighteenth Street, N.W., Washington, D.C. 20009; 202/234-4700.

THE term "information professional" is not mere newspeak. It is a description of an evolutionary change in the librarian profession. The librarian's information management and retrieval skills have evolved to encompass an exponentially growing world of information. The growing sophistication and availability of computers and telecommunications networks have extended the reach of the library/information center far beyond its own collection. As a result, patrons have access to information resources undreamed of 20 years ago. The librarian's primary duty still is to provide for patrons the most useful information sources available. However, both the sources themselves, and the tools used by the information professional to gain

access to them, have changed dramatically, altering forever the role of the organizational library.

Throughout history, the librarian primarily relied upon printed documents—books, periodicals, newspapers, etc.—as sources of information. The tools that arose to manage those sources were geared to the objects themselves: bibliographic data, physical description, copy and volume information, dates and issue numbers, and standard identification numbers. All provided a link to a single specific object—the physical document.

While those elements are still essential to the management of print media, electronic media offer a different product and, thus, demand a different approach. The focus of electronic media is not solely access to the object, since not only the object, but each of its parts, is potentially accessible via electronic retrieval. Thus, the object and the information contained therein have equal potential as library materials. The information can be described, identified, enhanced, and retrieved of itself. Full-text data, for example, is often accessible not simply by author-title-subject, abstracts, or even a thorough index, but *word-by-word*.

Such tools allow information professionals to offer selective, highly focused, and specifically targeted information, packaged to meet the specific needs of patrons. They now offer information services, as well as bibliographic services;

not only the printed object, but its specific contents. Thus, a fundamental change has occurred in the nature of library services; we have evolved from librarians to information professionals.

The effect of such changes on special librarianship prompted SLA President Frank Spaulding to appoint the President's Task Force on the Value of the Information Professional and to charge them with the task of examining two issues: the value of information and the value of the information professional. The Task Force has risen to the challenge.

Transcending the traditional notion of libraries as a "preeminent 'good'," (1) the Task Force establishes the information professional as a legitimate claimant to equal status with other corporate professionals. At the same time, it addresses two fundamental challenges that accompany such status:

1. Today's information professionals still battle corporate attitudes more applicable to a former generation of librarians. Despite the unprecedented expansion of information access and the evolutionary expansion of services offered by information centers, today's "information professionals are still perceived to consume resources rather than generate revenue"; often their services are classified as "inessential." (2)
2. Libraries and librarians have evolved beyond traditional roles to become involved, "pro-active" information experts, "team members . . . specialists in research, and . . . a (corporate) resource." (3) Yet those achievements trigger a greater demand on information professionals to justify their operational needs "with the same vigor that managers of other services bring to their funding agencies." (4)

It may seem ironic that expanding capabilities breed a corresponding increase in demand to justify one's existence. Perhaps, though, it is less irony than the nature of corporate evolution. As a

profession grows in vitality and expands in influence, its members are called upon to justify their newly claimed status, to defend the cost of their services, and to demonstrate the value they provide.

The background to discussion of that task is elucidated succinctly in Allen B. Veaner's "Introduction." (5) Even as information professionals are faced with clarifying their contribution and quantifying their value, they battle numerous "fundamental obstacles to a full appreciation" of their services. (6) The nature of those services—providing intellectual information—makes the task of quantification particularly difficult. At the same time, the library's traditional organizational roles—political and budgetary—work against the information professional who is faced with justifying his budget and asserting his professional standing.

Whether irony or evolution, as special librarians expand and revise their organizational role, so must they address the challenge of closer scrutiny. This report addresses the various aspects of that challenge, and points as well to the necessity for future discussion.

The Evolution of a Profession

A great temptation exists to declare oneself "present at the creation" of revolutionary change. This has happened in the recent past with those involved in the development and growth of the computer industry. The readings presented in the Task Force report are similar in kind: the discussion of a profound evolutionary change in special librarianship. They illuminate the ways in which organizational libraries have revised their self-definition. They discuss the full range of information services, a transcendence of the traditional "archive/self service" (7) role of librarianship, to the "Infoman" era, the age of the corporate librarian as a full-service, "knowledge-based counselor." (8)

Some librarians may find the latter vision a bit fanciful, perhaps even a bit off-center, an assumption of roles and tasks

unsuited to the historical mission of librarianship. For others, however, "Infoman" is rather a familiar character, performing duties neither particularly exceptional nor particularly different from those performed daily in their own information centers. Such conditions exist, as the readings prove, at Georgia Tech, in the halls of such institutions as Abbott Laboratories and Time, Inc., and among the information professionals cited by James Tchobanoff.

Adding Value and Quality

Few organizations today would deny the essential importance of information. Yet defining its *value* in terms of the cost of obtaining it is a difficult task which often has been left unaddressed. Many organizations assess the cost of maintaining a full-time information center. Yet rarely has value been quantified. Just as rarely have information professionals made their case for value, particularly in the language of the organization.

Miriam Drake addresses two essential issues—quality of service and value—citing two direct benefits derived from a full-service organizational information center: 1) the quality, the "added-value" of the information product the client receives, and 2) the value derived from the saving of employee's time. She demonstrates that the information professional's expertise allows the client varying levels of service. As that level of service increases, the client receives a comparable increase in the quality of the information. (9) For example, a vast difference exists between information retrieval by the client and by the information professional. The information professional, trained to know a great variety of sources and trained to employ them in a meaningful way, can be expected to return a result of more direct applicability to the question, with a greater expectation that relevant sources have not been missed.

The advent and ever-increasing number of readily accessible information resources has made such a task infinitely larger and more complex. Online data-

bases, library consortia and computer networks, inter-library loan networks, and numerous other reference sources are available to the information professional. Most of these are resources that the typical client, even the informed client, would have trouble identifying. Even if they could identify them, gaining access to them and using them efficiently and effectively requires training and constant use. This is the "added-value," the quality aspect of information service.

In addition to the value added by the quality of the information professional's applied knowledge and training, the information professional saves an organization's most valued resource—"employees' time and creative energy." (10) The information professional saves the time a client might have spent attempting to retrieve information. That employee could spend that time doing the work for which he or she is trained and paid. (In addition, information professionals are giving their employer the same value again, because by performing information services they also are using their time to accomplish the job for which they are trained and paid.)

The King Research studies and the results of the implementation of an online catalog at Georgia Tech (11) lend the weight of hard data to the ideas discussed by Drake. The net result of their projections is axiomatic: time is money. But King says more. The time spent gathering and absorbing information is countable money, a quantifiable cost factor for an organization. Therefore, the cost of an information center and information professionals factored against the time saved in the same activities performed less effectively by the employees at large presents a clear, demonstrable saving to an organization. In this discussion, King affirms Drake, and offers a formulaic approach to calculating specific value. That value is evidence that the information professional performs the same function within an organization as do accounting or legal departments: it provides essential service, performed by professionals whose experience and expertise assure a

net savings—a return on the money invested in information services—in employee time and in the quality of their service.

The Texas Instruments, Inc. (TI) libraries have taken the King Research studies a step further, a step into the “real world” of corporate librarianship. Employing an in-house user-survey, Texas Instruments librarians developed a system for assigning dollar value both to information services and, significantly, to the information professional. This puts the ideas presented by Drake and King Research into practice, with impressive results. The Texas Instruments technique was to develop a system for assessing a return-on-investment (ROI) figure that would clearly demonstrate the value received from information services.

The librarians assigned specific values to their services, then used their clients’ own calculations of the time they were saved by the information center and the information professionals. (12) The librarians then assigned a monetary value to their clients’ time. The results were then translated into a cogent corporate measure: man-hours saved. Such a calculation makes clear the value of the information center to an organization, measuring their contribution in terms of work-equivalency; their contribution was the equivalent of X-number of employee-hours: a clear dollars-and-cents savings to the organization.

Three aspects of the Texas Instruments results merit special mention:

1. The foundation of the calculation, time-saved, was based upon the personal testimony of the information center patrons—the organization’s own staff. Thus the calculation is testimonial as well as justification.
2. The librarians translated their results in business language: man-hours saved. This expresses the results in a way that will be immediately meaningful to the organization. It also conveys the librarians’ awareness of organizational priorities.

3. The TI libraries kept in mind another of the highest priorities of their organization: the introduction of products as quickly as possible. In assessing the value of their services, the librarians cite the engineering-time saved as “worth more than money—it can mean the difference between the success or failure of a product.” (13)

The cumulative return-on-investment (ROI) figure is an effective, “business-language” measure of value. Similarly, the two values—the value of the information center and the value of the individual information professional—offer other information professionals an example of an effective approach to value-assessment.

The Qualities of an Information Professional

No discussion on the information profession would be complete without an identification of some of the essential qualities that define the information professional. In the excerpts from James Matarazzo’s study, corporate executives cite a number of qualities that indicate the qualities sought and acknowledged by executives. These qualities speak directly to the image of the librarian. Perhaps most interesting in that light are references to information professionals as part of the team. (14) Traditionally, corporate librarians are thought of as lending support to the creative team, while remaining essentially apart from it. The fact that often they are regarded as part of the team indicates a new status, and reflects the value placed upon their contributions.

The concept of values, central to the issues faced by the Task Force, is referred to often, and in unequivocally financial terms:

- Dr. Ronald Easley: “It is more cost-effective to have the library professional search for information. . .” (15)

- W. R. Wirth: "(Information professionals) add the value that yields returns from the investment." (16)
- Alan Brittner: "Senior management has already asked really hard questions about the value of the information professionals, and these people were very highly rated." (17)

Specific executives cited various qualities that contribute to the value of information professionals, but two qualities stand out.

The first quality is expertise. This is perhaps most indicative of the new status of librarianship in the corporate world. It is clear that information-gathering is an area of expertise that is recognized as complex and vital. Virtually every executive referred to the information professionals' ability to locate and process information. This clearly goes beyond "finding the book on the shelf." It refers to expertise at work: "... years of experience..."; (18) "... specialists in research..."; (19) "... group of professionals who know how to exploit those resources to meet the particular information needs of our organization"; (20) "the staff of the library add value by their experience, expertise, and knowledge..."; (21) and more.

The second quality cited is corporate sense. This is a quality less tangible than experience and expertise, but as crucial in the organizational information center. Information professionals who know and understand corporate structure, products, history, and style add considerable value to service. They couple that empirical corporate knowledge with their information-gathering expertise to provide highly relevant and focused information packages: "They understand the context in which questions are being asked. It is a mixture of knowledge of the sources, the company, and the use of data along with the ability to interpret the request which provides the value." (22)

The qualities of an information professional are also discussed by Ann W. Talcott, though in a different sense. Talcott's vision for the near future of the information profession embodies much that is

already familiar to information professionals. For example, her "Characteristics of the Successful Information Professional" (23) include attributes cited above, such as an understanding of the corporate business and expert knowledge of information sources. However, Talcott's vision extends the usual view of the information professional's role. She envisions an information professional who functions as a corporate "knowledge-based counselor." (24) This professional takes on what amounts to case-work, much as might a corporate attorney, handling specific information-packaging assignments. These highly focused information projects, a number of which the "Infoman" would handle simultaneously, extend beyond the accumulation and packaging of information. They might appear in the form of reports or recommendations.

This vision takes a step beyond the usual discussion of the information professional's role. It is a challenging vision, in more sense than one. For even as it presents a professional challenge to corporations to entrust information professionals with such responsibility, it also challenges the historical role of the librarian. A mission of librarianship has traditionally been to provide objectively the materials sought by the patron. Collection development policy gives librarians considerable editorial freedom to include or omit certain materials for public consumption. Despite that freedom, librarians philosophically have placed themselves at the vanguard of freedom of information. They have given themselves the role of providing the material requested. Editorial judgment belonged to the patron: he could do what he wanted with the material once he had it; the librarian's duty was, within limits, to provide it.

Talcott's vision transfers that editorial responsibility to the information professional. Far from revolutionary, such transferal may well be the part of the continuing evolution in the profession. Many librarians who perform remote database searching as a regular part of their reference duties have already begun,

through necessity, to exercise a high degree of editorial judgment. Particularly in the corporate setting, information professionals are often simply asked to compile material, to create a bibliography, or write a summary report, quite similar to Talcott's "Infoman." Thus, the idea of the information professional evolving into a corporate information consultant may not be so extreme a leap of the imagination.

The fact that such a vision may be the partially fulfilled is testimony to the information professional's enhanced status. For the "Infoman," by the nature of this mandate, is accorded the ultimate indication of corporate trust: he is allowed to use his own judgment, to make a recommendation based upon his knowledge and expertise. When information professionals attain such positions, it will mean full emergence from the limited role of objective information provider, to a new role as "a member of the research team as well as of the executive suite." (25)

Like the concrete statistical results of the Texas Instruments, Inc. user survey, James Tchobanoff's case studies of actual value received for information services is both rewarding reading for the information professional and hard evidence of the "real money" value of the information professional.

These examples speak for themselves: the cautionary tale of the nearly \$500,000 outlay that could have been avoided by a patent search, the legal damages avoided by such a search, the \$11 computer search that precluded an estimated 200 hours of laboratory work. These are the types of stories not unfamiliar to experienced special librarians.

There is a common thread in these stories that is perhaps the most important factor in the new role of the information professional. Each of the information professionals in question was dealing with subject-specific, highly focused information sources—most, presumably, accessed online. This ability—the ability to search massive databases of information for quite specific information and the information professionals' knowl-

edge and expertise in using those databases—is perhaps most responsible for the enhanced and still-expanding promise of the information profession.

Looking to the Future

We are now beyond the infancy of the information age. As the information industry matures, the library/information profession must mature with it. At the vanguard of that maturation process is the corporate information professional.

The discussions presented in this report provide a whole picture of the evolutionary changes that have occurred in the information profession and, importantly, of the primary challenge still to be met: to prove beyond doubt the truth of the claim that information professionals deserve an equal place alongside their corporate peers—the engineers, the lawyers, the MBA's, and other professionals—whose credentials are well-established in the corporate milieu; that beyond doubt, information professionals are people who "add the value that yields returns from the investment." (26)

Further, the challenge is to establish reliable and effective means by which to measure value and to present results. The product of such measures will transcend their use as a tool for justification and self-promotion. Such measures will also allow us to more effectively evaluate our own performance, to set goals, to plan, and to measure results.

The Case Political and the Case Budgetary

The information professional is an essential, coequal partner with other corporate professionals. Yet universal acceptance of such status is not easily attained. It is not achieved by merit alone; it must be sought. The case must be made: the case political and the case budgetary. It is not enough to cite an advanced degree and extensive experience as indicative of value. In the corporate world, value must be demonstrable, quantifiable, and persuasively

presented. The Task Force report demonstrates beyond reasonable doubt that such presentations are possible. Our task is now to find, and to share with our colleagues, the methods for assessing value and presenting our findings in a meaningful way within our organizations.

At the Association level, SLA has begun the process. The creation of the Task Force and the publication of this report demonstrate the Association's commitment to take the lead in helping to establish this movement.

At the educational level, library schools must begin to integrate the idea of value-assessment into their curricula. The philosophy and the methods of librarianship must share emphasis with the pragmatic issues faced by library professionals.

At the individual level, librarians need to let each other know how they make their case to employers and how they justify budget allotments, personal expenditures, automation costs, and library expansion and diversification. They need to discuss the services they provide to patrons that make their operations both essential to their organizations and visible within those organizations. Such techniques as the Texas Instruments, Inc. user survey and the Georgia Tech cost/benefit analysis serve to make the case for librarians as corporate professionals.

The vehicles for such communication already exist in SLA publications (*Special Libraries*, *Specialist*, division newsletters, and chapter notes), at conferences, and in individual professional interaction.

The mandate is clear. Information professionals must take concrete steps to affirm the validity of their membership in the professional world. The first step toward that goal has already been taken by the SLA leadership and the Task Force. The second step must come from information professionals themselves. Each of us shares responsibility to join that effort. The step must be taken internally before it can be taken within an organization. It is not necessarily an easy step to take, for it involves leaving be-

hind some of the comforts of the "libraries are good" axiom. It means entering a more competitive level of the organization, where accountability and justification are facts of life.

On the other hand, many corporate librarians exist at that level already. For them, proof of professional standing carries with it positive connotations. It is a just reward for the time and energy spent building the corporate library into a corporate information center and evolving from the role of librarian to that of a trained, competent, and invaluable information professional. Either way, it is an important evolutionary step in the library profession. For each of us as well as for our organizations, taking the next step will yield an appreciable return on investment. That is the bottom line.

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David C. Beveridge is the supervisor of systems and acquisitions at the National Geographic Society in Washington, D.C.

"Expanding Horizons: Strategies for Information Managers"

SLA's 79th Annual Conference
June 11-16, 1988
Denver, Colorado

THE 79th Annual Conference of the Special Libraries Association will be held in Denver, Colorado, from June 11-16, 1988. The theme chosen for this year's conference is "Expanding Horizons: Strategies for Information Managers," and the 1988 conference will focus on the strategies that information managers use in service and information, either to expand their own capabilities or to adapt the expanding horizons around them. The broad scope of programs planned for the conference week will provide an enriching experience for all attendees. The conference will feature valuable continuing education seminars and workshops to enhance professional growth. Expert speakers have been scheduled to present the general and division sessions. Social events are also being planned to provide fun and a chance for you to relax with your colleagues at the end of a long conference day. This conference is one that you won't want to miss.

Special Features of the Denver Conference

Professional Development Programs. The SLA Conference will feature a variety of professional development activ-

ities designed to meet the needs of both new and experienced information professionals.

The Professional Development Program will include approximately 20 Continuing Education Courses that offer something for everyone. Topics such as "Artificial Intelligence and Expert Systems," "Database Construction Issues," "New Technology and Its Impact on You," and "Making Money: Fees for Information Service" will be offered. The Professional Development Program will cover a broad range of topics designed to sharpen your skills in meeting the challenge of library and information management.

Division Programs: Business and Learning. All SLA divisions will hold business meetings during the conference. This will give you the opportunity to find out what is happening within your division and to voice your opinion on future decisions. Many divisions will also sponsor educational sessions that will be technical in nature and cover areas of special interest to the division.

Products and Service Exposition. The Exhibit Hall is a vital, exciting component of an SLA Conference. A recent membership survey revealed that 69 percent of respondents indicated that the

SLA Exhibit Hall is an important factor in determining their conference attendance. Over 250 exhibits will be displayed at this year's Annual Conference. These booths will be staffed by knowledgeable people representing topnotch manufacturers and suppliers specializing in products relating to the library field.

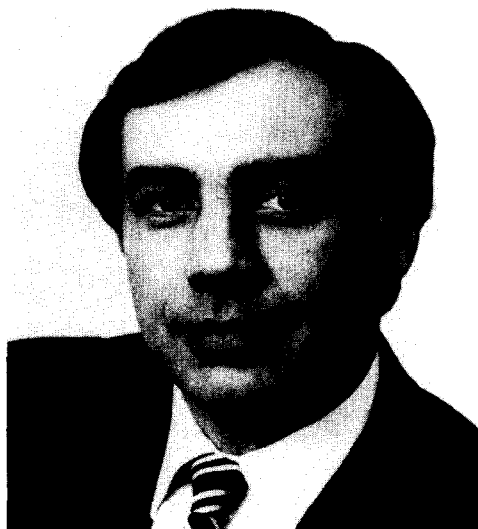
The exhibits will provide you with information on such products as:

- library software
- audiovisual materials & equipment
- data processing equipment
- microforms & microform equipment
- library furniture
- information storage & retrieval
- office furniture & equipment
- copying & duplicating equipment
- specialized books & periodicals
- mini computers
- micro computers
- portable copying equipment
- films.

You will also learn about such services as:

- publishers
- government information services
- library binders
- subscription agencies
- book jobbers
- indexing & abstracting services
- alerting & search services
- database search services
- consultants.

In Denver this year, the exhibits will be located in Currigan Hall in the Denver Convention Complex. If you are unable to register for the program sessions of the conference, but are interested in examining the various products and services in the Exhibit Hall, write for a complimentary Exhibit Hall pass and specify the number of persons attending. Send a self-addressed, stamped envelope to: Manager, Conference & Exhibits, Special Libraries Association, 1700 Eighteenth Street, N.W., Washington, D.C. 20009.



Michael H. Annison, president of the Westrend Group, will address General Session 1, "Expanding Horizons," on Monday, June 13, at SLA's Annual Conference.

The Exhibit Hall will be open Sunday, June 12, to Wednesday, June 15. Special events are also planned for the Hall, including an Association Reception on Sunday afternoon and coffee and desserts on Tuesday. Be sure to allow ample time in your schedule to visit the Hall.

General Sessions. Two outstanding speakers will address conference attendees during the general sessions on Monday and Tuesday (June 13 & 14) mornings. Michael H. Annison is currently the president of the Westrend Group, a business formed for the purpose of monitoring social, economic, and political change in order to assist clients in adapting to the new economy in the United States. Prior to forming the Westrend Group, Mr. Annison was vice president of the Naisbitt Group whose research was the basis for the book *Megatrends*. Roger von Oech is one of the nation's top lecturers on creativity. His company, Creative Think, has counseled more than 25,000 professionals on ways to stimulate creative thinking and innovation in business. Mr. von Oech is the author of a



Roger von Oech, president of Creative Think, will address General Session 2, "Strategies for Information Managers," on Tuesday, June 14, at the SLA Conference.

successful book on the subject of creativity, *A Whack on the Side of the Head*.

Meeting Your Peers. One of the advantages to be gained by attending a national conference is the opportunity to meet a wide range of fellow professionals. Many excellent and practical ideas can be gained by interacting with thousands of the best teachers in the field—your peers. Social events have been scheduled to allow time for you to relax with your colleagues.

Employment Clearinghouse and Career Advisory Service. The SLA Employment Clearinghouse is a service available to all conference registrants and employers. Through this service, job applicants and employers are brought together to discuss future employment.

If you have any questions about the special librarianship and information management field in general, or your career in particular, take advantage of the SLA Career Advisory Service. Experienced SLA members will serve as counselors to help you find the answers you need.

Full details will be provided in the *Preliminary Conference Program*, which will be available in early March.

Field Trips. More than a dozen field trips sponsored by SLA and many of the divisions have been scheduled for this year's conference. Some trips will allow you to visit a place of special interest to your division. Others will allow you to learn about the geographic area and its history. And some are just for your pleasure and enjoyment.

Cost. SLA works hard to help its members get the best value for their money. Seminars, field trips, and special events are planned so that attendees receive the most for each dollar spent. SLA has used its group-buying power to arrange special low prices on hotels, car rentals, and air fares. Take advantage of this service by staying in a designated conference hotel and by using SLA's official airline.

Denver. "Denver—A Mile High and Climbing" is the title of an essay prepared by the Denver Metro Convention & Visitors Bureau. Denver is built on gentle, rolling plains about one mile above sea level. The clear, dry air of this sunny city allows you to clearly see the mountains that provide the dramatic backdrop to the skyline. The frontier flavor of the Old West can be experienced by visiting the Larimer Square area with its gas lamps, saloons, and shops. The modern face of Denver can be found in the world famous museums, the Center for the Performing Arts, and the many skyscrapers in the downtown area. The nearby Rocky Mountains offer magnificent scenery and a variety of attractions—silver mines, restored Western towns, the Coors Brewery, and the Air Force Academy to name a few. Be sure to be there this coming June.

Conference Programs

Continuing Education Courses. SLA continuing education courses have been instrumental in providing information professionals with a wealth of knowledge. SLA's Continuing Education Program is designed to meet the changing

needs of information specialists by preparing them for new duties and responsibilities in such areas as management, new technology, and library automation techniques. Knowledgeable instructors have been chosen for their expertise in the topic area, acquired through both library and academic experience.

This year's conference will feature approximately 20 continuing education courses. Throughout its existence, the Continuing Education Program has earned an excellent reputation as a highly respected resource in the information management profession. Participants will earn 0.6 Continuing Education Units (CEUs) and a certificate upon completion of each course.

Middle Management Institute. The Middle Management Institute (MMI), designed for information professionals with five or more years of managerial experience, is the second phase of SLA's Professional Development Program. Developed to provide practical training in specific areas of management, this certificate program will sharpen participants' overall organizational and decision-making skills through expert instruction and interaction with peers.

The MMI is a 75-hour sequence, consisting of five independent, yet interrelated, units including:

1. Management Skills
2. Analytical Tools
3. Human Resources
4. Marketing and Public Relations
5. Technology and Applications.

Each unit is a 15-hour, two-and-a-half-day session.

MMI units are held in various locations throughout the U.S. and Canada each calendar year. The "Human Resources" and "Technology and Applications" units will be offered in conjunction with the 1988 Annual Conference.

Participants will earn 1.5 CEUs for completion of each unit. Certification is based on completion of all five MMI units within an approximate two-year period.



Mile-High Denver sits on high rolling plains, just east of the great Rocky Mountains. (Photo courtesy of the Denver Metro Convention & Visitors Bureau.)

For further details regarding Annual Conference Professional Development Activities, refer to your *Preliminary Conference Program*, which will be mailed to SLA members in March 1988, or contact: Professional Development Section, Special Libraries Association, 1700 Eighteenth Street, N.W., Washington, D.C. 20009.

Conference Housing. The Denver Marriott City Center and the Hyatt Regency Denver (formerly the Fairmont Hotel) have been designated as co-head-



The quiet beauty of Rocky Mountain National Park is found just 70 miles from downtown Denver. (Photo courtesy of the Denver Metro Convention & Visitors Bureau.)

Room Rates and Hotels for the 1988 SLA Conference

Hotel	Single	Double
Denver Marriott City Center	\$90	\$100
Hyatt Regency Denver	89	99
Brown Palace	90	105
Denver Inn	58	58
Executive Tower Inn	58	63
Holiday Inn Denver Downtown	60	65
Westin Hotel Tabor Center	95	95

quarters hotels during the 1988 SLA Conference. Meetings will be held in these two hotels as well as in Currigan Hall. Sleeping rooms will also be found in an additional five hotels in Denver. See the table for room rates and hotels.

Registration. Registration will take place in Currigan Hall, in the Denver Convention Complex. Since we are expecting a sizeable attendance at this conference, we strongly recommend advance registration. In addition to avoiding long, time-consuming lines, advance registration can also save you money. The registration fees for this Annual Conference (including the recent Board-approved increases) are listed below:

* Member, Advance (by May 1)	\$115.00
* Member, One-Day	85.00
* Member, On-Site (after May 1)	145.00
Nonmember, Advance (by May 1)	140.00

Nonmember, One-Day	105.00
Nonmember, On-Site (after May 1)	175.00
Student/Retired/ Accompanying Person	65.00

* SLA member rates apply to SLA, ASIS, ARLIS/NA, and AALL members.

All SLA members will receive full registration and ticket information in the *Preliminary Conference Program*, which will be mailed to you in March. If you have any questions regarding the Annual Conference, or if you are a nonmember and wish to be placed on the mailing list to receive a *Preliminary Program*, please contact the Manager, Conference and Exhibits, Special Libraries Association, 1700 Eighteenth Street, N.W., Washington, D.C. 20009; (202) 234-4700.

**JOIN US IN DENVER FOR
SLA's 79th ANNUAL
CONFERENCE!**

Actions of the Board of Directors

October 22-23, 1987

The SLA Board of Directors met at SLA headquarters in Washington, D.C., on October 22-23, 1987. Actions taken and reports of note are summarized below.

1987 Election Nominees—The Board approved the slate of candidates for the spring 1988 election:

President-Elect:

Edwina "Didi" Pancake, University of Virginia, Charlottesville, Va.

Muriel B. Regan, Gossage-Regan Associates, New York, N.Y.

Treasurer:

Catherine A. Jones, Congressional Research Service, Washington, D.C.

James L. Olsen, Jr., retired, Bethesda, Md.

Chapter Cabinet Chair-Elect:

Cynthia R. Sowards Mitchell, Mitchell Information Services, Dallas, Tex.

Marlene K. Tebo, University of California, Davis, Davis, Calif.

Division Cabinet Chair-Elect:

Roger Haley, U.S. Senate Library, Washington, D.C.

Beth Paskoff, Louisiana State University, Baton Rouge, La.

Directors:

Carol A. Drum, University of Florida, Gainesville, Fla.

Cynthia Steinke, University of Minnesota, Minneapolis, Minn.

Ann Ward Talcott, Library Management Consultant, Short Hills, N.J.

Gloria Zamora, Sandia National Laboratories, Albuquerque, N.Mex.

The Board elected the Nominating Committee for the Spring 1989 election. The committee members are: Sylvia E. A. Piggott, Bank of Montreal, Montreal, Canada; Vivian J. Arterbery, National Commission on Libraries and Information Science, Washington, D.C.; Marjorie Hlava, Access Innovations Inc., Albuquerque, N.Mex.; Jack Leister, University of California at Berkeley, Berkeley, Calif.; and Margaret L. Young, Gale Research, Minneapolis, Minn.

Special Programs Fund Awards—The Board also reviewed and discussed the merits of 15 proposals submitted for funding under the 1987 Special Programs Fund Grant. Two proposals were approved by the Board for funding. The titles and authors are:

"The Value of the Information Professional," James M. Matarazzo, Simmons College, Boston, Mass.

"The Study of the Management and Services of Special Libraries in the United States and Canada," Fred W. Roper and Robert V. Williams, University of South Carolina, Columbia, S.C.

1988 Budget—Following a report on the financial health of the Association by Treasurer Muriel Regan, the Board reviewed and approved the 1988 budget.

Executive Director's Performance Review—The Board also received and approved the performance evaluation of the Executive Director as recommended by the Association Office Operations Committee.

Committee Funding—Six committees and one SLA representative received approval for funding requests for 1988: Awards, Catalog-

ing, Finance, Networking, Scholarship, and 1989 Conference Program Planning committees and the SLA representative to the CNLIA Ad Hoc Committee on Copyright Law, Policy and Implementation.

Annual Conference—Denver Conference Planning Committee Chair Mary Lou Stursa reported on the progress made by the committee and division planners. The Denver Annual Conference will feature keynote speakers on both Monday and Tuesday. To date more than 80 programs, exclusive of field trips, have been developed by division planners.

In a related action, the Board voted to increase conference registration fees by \$20 for SLA members, students, retired, and accompanying persons and by \$30 for nonmembers beginning with the Denver meeting.

Bill Woodruff, New York Conference Committee chair, presented the theme for the 1989 Annual Conference: "User and Information Dynamics: Managing Change." The Board unanimously approved the theme and complimented the committee for emphasizing the users.

SLA member Myra Norton, representing the Florida Chapter, made a request that the Board consider a Florida site for future meetings. The Board instructed staff to investigate a Florida city for the 1992 Winter Meeting.

Ron Coplen Leadership Address—The Board passed a resolution creating the Ron Coplen Leadership Address as the keynote address at the Winter Education Conference. The address will honor the many contributions made by Mr. Coplen to the profession and the Association. The lecture will be supported by contributions made in honor of Mr. Coplen. The annual stipend funding the lecture will be drawn from the interest earned by contributions.

Staff Reorganization—Acting on a recommendation from the Association Office Operations Committee, the Board approved a reorganization of the Association staff effective January 1, 1988. The Assistant Executive Director, Program Services will be promoted to the Associate Executive Director. The basic framework of the Association office staff will

remain the same with the exception of the Professional Development Section, which will be made a separate arm of the Program Services Department under the direction of the Assistant Executive Director, Professional Growth. The current Director, Professional Development will be promoted to the new position. Additionally, the Manager, Information Resources will be promoted to Director, Research and Information Resources and a new position of Supervisor, Information Resources was approved. The new Professional Growth Section will consist of the Assistant Executive Director, Professional Growth; Director, Research and Information Resources; Supervisor, Information Resources; Professional Development Assistant; Manager, Membership Development and Marketing; and a secretary. The creation of the new Professional Growth Section will enhance the Association's research capabilities, as well as channel more resources for the development of new professional growth opportunities and career services for members.

Government Relations—Four resolutions were passed in the area of Government Relations. The Board approved resolutions on confirming SLA's positions on the 1990 census data, FCC access charges, nomination of the U.S. Archivist, and privatization. The Board also approved in concept SLA testimony on a bill introduced by Congressman Major Owens. The bill, if enacted, would require that future Librarians of Congress be professional librarians. SLA supports the concept that the Librarian of Congress be a professional librarian, but that the criteria not be limited to a single qualification.

New Member Service—The Board also reviewed a new membership service—a credit card program—that will be made available to members in late 1987 or early 1988. Complete program details will be sent to all members in the near future.

Next Meeting of the Board of Directors—SLA's Board of Directors will meet next in Williamsburg, Virginia, January 27–29, 1988, during the 1988 Winter Education Conference.

IFLA 1987

"Library and Information Services in a Changing World"

Frank H. Spaulding

AS patron of the Library Association, Queen Elizabeth II welcomed some 2,500 attendees (222 from the USA) from 22 countries to Great Britain for the 53rd Council and General Conference of the International Federation of Library Associations and Institutions. The 60th birthday of IFLA was a time for celebration with a record attendance, recognition of Spanish as an official IFLA language, a satisfactory resolution to the availability and distribution of conference papers, and the retirement and extraordinary accolade of appreciation of the Secretary General Margreet Wijnstroom (SLA Honorary Member 1977). The host country's Library Association is commended for their excellent conference program and the technical arrangements that made this professional meeting so successful with 238 events and 160 exhibitors.

Council Meeting

The Council, composed of association and institution representatives, convenes biennially to vote on matters such as elections, dues, resolutions, etc. This year three members were elected to the ruling Executive Board: E. V. Pereslegina (USSR), M. Beaudiquez (France), and A. J. Evans (UK); I. Pizer (the USA candidate) was not elected. A dues increase of 17 percent in 1988 and 14 percent in 1989

for institutional members was approved. Also approved was the promotion of a group of nonvoting, sustaining affiliates (in particular, library providers, consultancy firms, etc.), their fees amounting to approximately 10 times the fees for institutional, voting members. It was announced that 28 members (6 from industrialized countries) had not paid their dues since 1984. This might result in their exclusion. The Executive Board will consider the whole dues structure at the 1989 Council. A remembrance was paid to Mark Baer for his work on institutional membership.

At the final Council session the following resolution on charging for public library services was accepted:

"IFLA will re-affirm the concept of a public library service available without direct charge for the borrowing and consultation of library materials, including the provision of assistance and advice by professional librarians; and that charges for computerized information retrieval should only be passed on to the user when added value services are provided at the express wish of the client."

The Council also approved Spanish as an official language for IFLA.

Henrietta Avram completed her four-year term on the IFLA Executive Board, the last two as First Vice President, and was elected an Honorary Fellow. Joseph W. Price, chief, Science and Technology

Division, Library of Congress, was elected chair, Professional Board, and ex-officio member of the Executive Board replacing Irwin Pizer, university librarian for the Health Services, University of Illinois at Chicago. Miriam Tees, associate professor, Graduate School of Library and Information Studies, McGill University, was elected chair, Division of Education and Research. Mary Ellen Jacob, vice president, Library Planning, OCLC Inc., was elected chair, Section on Statistics.

Paul Nauta succeeds Margreet Wijnstroom as IFLA Secretary General. At the conclusion of the Council, there were numerous tributes of appreciation and recognition of Margreet's accomplishments during her 15½ years of service. Both SLA and ALA presented her with resolutions of appreciation. Of special note was a festschrift published in her honor and her election as an Honorary Fellow of IFLA.

Programs

One of the major technical presentations was a review and an update on the progress achieved in IFLA's core programs: 1) Universal Bibliographic Control and International MARC, 2) Universal Availability of Publications, 3) Preservation and Conservation, 4) Universal Dataflow and Telecommunications, and 5) Advancement of Librarianship in the Third World. The core program on preservation and conservation, hosted by the Library of Congress, Washington, D.C., showed the most progress this year. Their goals: to raise the level of preservation awareness around the world, to produce an international preservation newsletter, to develop and provide educational materials about preservation, and to develop and encourage possibilities for the education and continuing training of professional conservators were all achieved.

In addition to the conference plenary session on preservation and the library as a source of information in developing countries, there were presentations that addressed a wide range of library and

information services. There was something for everyone; however, the IFLA conference planners managed to reduce to a minimum the usual conference flaw of too many conflicting technical programs. Seldom did one have to make that difficult choice of which session to attend. The few times one did, one usually had the preprint of the talk to consult. At the major sessions, simultaneous interpretation service was provided, while at other sessions, one was left on one's own.

The technical papers followed track interests of the IFLA membership, such as, bibliographic control, collections and services, education and research, general research libraries, libraries serving the general public, management and technology, regional activities, and special libraries.

All attendees received a complete set of all submitted papers (and translations in the language of their choice) upon registration—a satisfactory resolution to a long-standing problem at IFLA conferences.

Some program highlights for me were IFLA's Division on Special Libraries' program, which included an interesting report on the BBC Domesday Project and a status report on the Appollo satellite document delivery system for the British Library Document Supply Centre. Also the Science and Technology Libraries Section presented an interesting report on the Adonis project of document delivery systems from full-text journals on optical disk. Yves Courier from UNESCO spoke on the harmonization of education and training at the Division of Education and Research program. Miriam Tees presented a report on the resolutions agreed upon at the Pre-Conference Colloquium on the Education and Training of Library, Information and Archival Personnel. At a session dealing with research and library associations, it was stated that most library associations do not have active research programs, yet applications research is reasonable and needed by those in the field who manage and provide library/information services. This was neither a balanced nor well-researched

presentation. (Copies of many of the papers presented at the conference are available from the SLA Office.)

Other

Twenty-one pre- and post-conference seminars were held that helped to enrich the conference program. Two of special interest to SLA were: "International Colloquium on the Education and Training of Library, Information and Archival Personnel: Moves towards Harmonization" and "Open Systems Interconnection: the Communications Technology for the 1990's." The proceedings of both seminars will be published by IFLA later this year.

Thursday is traditionally the day for conference participants to make professional visits to libraries. Some 70 libraries in and around London opened their doors, revealing the rich panoply of re-

sources and services available to the public and specialized clientele they serve.

Social events are a major part of IFLA's conferences, for they offer the opportunity for colleagues to meet one another. The British outdid themselves with a gala reception on Monday followed by the London Mozart Players on Wednesday and a Government reception at the Natural History Museum in London on Thursday.

The next IFLA conference will be held in Sydney, Australia, from August 30 to September 3, 1988, with the conference theme "Living Together." Anyone wishing detailed information may contact David R. Bender, Executive Director, Special Libraries Association, 1700 Eighteenth Street, N.W., Washington, D.C. 20009.

Frank H. Spaulding is a library consultant and a past president of Special Libraries Association.

NEW BOOKS FROM SLA

Automating the Newspaper Clipping Files: A Practical Guide, compiled by the Newspaper Division, SLA. 1987. 51 pp. ISBN 0-87111-328-7. \$30.00.

Since 1980, more and more newspaper libraries have converted from manual clipping collections to electronic ones. The process requires time, money, and planning on the part of the newspaper librarian, as well as on the entire library staff. This volume, compiled by the Newspaper Division of the Special Libraries Association, was published in order to help the newspaper information community through such a conversion process.

Government Publications Catalogs, second edition, by Steven Zink. 1988. 312 pp. ISBN 0-87111-335-x. \$20.00.

Many United States federal government agencies issue detailed catalogs of their informational products. These listings provide unique resources for the acquisition, bibliographic control, and reference of government information. The completely revised second edition of this critically acclaimed work contains more than 370 entries, an increase of over 140 from the first edition. Also new are a title index, an expanded subject index, and lengthier annotations. The catalogs described contain audiovisuals, machine-readable data files, microforms, and print materials.

Guide to Career Opportunities for Special Librarians and Information Professionals, compiled by Special Libraries Association. 1987. 50 pp. ISBN 0-87111-330-9. \$8.00.

An inexpensive, easy-to-use reference source for information professionals seeking employment. The *Guide* includes listings of publications that advertise employment opportunities, placement and executive search firms, and telephone joblines, in addition to reprints of recent articles on careers in the information field and a bibliography of career and employment references.

The Information Profession: Facing Future Challenges, 1987. ISBN 0-87111-334-1. \$25.00.

This proceedings is a compilation of papers presented by the 17 speakers at SLA's second State-of-the-Art Institute. Topics include: information malpractice, fee-based services, chief information officers, and the special library in 2010.

Library Management in Review: Volume II, by members of the Library Management Division, SLA. 1987. 165 pp. ISBN 0-87111-329-5. \$13.75.

This book provides the reader with a useful collection of down-to-earth articles written by practicing librarians. The chapters are based on articles that first appeared in the *Bulletin* of the Library Management Division. Topics include How to Shape the Company Library Image, Styling Yourself for Management, Managing Corporate Libraries in the Eighties, Publishing Tips, Writing Effective Memos, Staff Development, Microcomputer Materials/Applications, and the Electronic Revolution.

Special Libraries: A Cumulative Index, 1981-1986, compiled by Joyce Post. 1987. 40 pp. ISBN 0-87111-327-9. \$20.00.

This indispensable volume is a cumulative author, title, subject, and member information index to all the issues of *Special Libraries* from 1981 through 1986. Citations include all articles, book and software reviews, letters to the editor, and SLA conference and officer candidate information published in the journal in the past six years.

Who's Who in Special Libraries, 1987-88. 1987. 296 pp. ISBN 0-87111-331-7. \$25.00.

Who's Who in Special Libraries provides a complete alphabetical listing of members, their addresses, and their telephone numbers.

Codes following addresses identify chapter and division affiliations. This year the directory includes separate listings of members by chapter, division, and business affiliation. SLA has approximately 12,000 members in 55 regional chapters and 28 divisions. Divisions include Business and Finance, Information Technology, Library Management, and Sci-

ence/Technology, among others. *Who's Who* supplies you with information to make contact quickly, easily, and directly.

TO ORDER: Contact Special Libraries Association, Order Department, Box CA, 1700 Eighteenth Street, NW, Washington, DC 20009, or call (202) 234-4700.

LETTERS

TRIBUTE TO DR. BOAZ

The departure of Dr. Martha Boaz from Southern California to her native Virginia is a deep loss to the SLA Southern California (SoCal) Chapter. She has been a supportive member since her arrival in the Southland in 1953 to become dean of the School of Library Science at the University of Southern California (USC). Dr. Boaz has been very much one of us with her personal and professional associations within the chapter as well as at USC. She pioneered in establishing a course on special librarianship at USC, with chapter members serving as lecturers and workshop leaders, and assisting students with job placements in special libraries in the Southland—all this at a time when field work experience as a requirement for the professional degree was virtually nonexistent. Today we take such matters for granted, but I'm a firm believer in giving credit where credit is due, and certainly Martha Boaz needs to be applauded for her wisdom and foresight in advocating theory as well as practice in the principles of special librarianship.

Often at informal shoptalks at chapter meetings, she would emphasize her firm belief that any library should be a *living* library—that is to say, a special library in its truest sense. And when she had occasion to set up a TV program about 20 years ago with SLA SoCal Chapter members as panel participants, she called it just that—"The Living Library." Need I say that I was overjoyed when she invited me to discuss the behavioral sciences and their place in a special library such as mine. She knew of some of my struggles at the UCLA Neuropsychiatric Institute where I was involved in creating a professional staff library for the academics and a special library for the patients. I was attempting to carry out my responsibilities as a *special librarian*—i.e., trying to put knowledge to work in every aspect of my position, be it the behavioral sciences concept or the patients themselves, and to maintain the highest possible standards. Later when I required evaluations of my efforts, Dr. Boaz generously rushed to my

aid and notified the administration of our professional association dating back to the beginnings of her tenure at USC, as well as what she had observed in my libraries and in the workings of my staff.

After her departure from USC, I had the pleasure and privilege of enjoying many luncheon meetings with her during her visits to UCLA. What impressed me most about Dr. Boaz' relationships with UCLA was that among her avid admirers were the founding father of the UCLA Graduate School of Library Service, Dr. Lawrence Powell, and his successor as dean, Dr. Andrew Horn! There were other individuals of course, such as Mrs. Johanna Tallman and other faculty members, but what would strike me was the way she seemed completely attune with the tempo of the SLA SoCal Chapter. Rather than rivalry and competition, there was a sense of network, a feeling of cooperation between the two schools that Dr. Boaz wholeheartedly believed in. It certainly was evident in people's reactions to her personally and professionally.

In recent years, she has been a member of a National Advisory Council on the Control of Drug Abuse, which meets several times a year in Bethesda. She has been the only educator on the committee, which has included such eminent specialists as UCLA's late Sidney Cohen, M.D. Their mission has been to discuss problems and research in the field and to pass on grant applications. Although her term comes to an end this year, I predict that Martha Boaz will be invited to join yet another national committee of stature and significance affecting national policies.

And so, the end of her career in Southern California marks a new beginning for her—back to her roots in Virginia where the past will truly be prologue. SoCal's loss is the gain of SLAers who will benefit from Martha Boaz' very presence in and around the DC area.

Sherry Terzian, M.S.
Librarian and Director (1961–1986)
Mental Health Information Service
Neuropsychiatric Institute, UCLA

Reviews

Business Information: How to Find It, How to Use It, by Michael R. Lavin. Phoenix: Oryx Press, 1987. 299 pp. ISBN 0-89774-157-9. \$49.50.

Designed to be a practical guide to locating secondary business information sources, Michael Lavin's book treats the topic of business information from two angles—instructional and bibliographic. Lavin begins each chapter by providing some basic background in the area of business to be explored: investments, trademarks, statistical analysis, demographics, economics, marketing, business law, tax law, etc. He adeptly and clearly answers such questions as: What is a 10-K report? How does one interpret the stock quotation page of the newspaper? What statistics comprise the *Index of Leading Economic Indicators*? What is an equity option? What is the difference between a company and a corporation? The author also provides an annotated bibliography of relevant books, trade journals, newspapers, newsletters, periodical indexes, government publications, financial filings, looseleaf services, and online databases. Annotations are two to three paragraphs long and include comparisons and evaluations.

The chapter on locating corporate financial information is especially strong, and this is perhaps an area where librarians and researchers alike need all the guidance they can get. The author does not ignore the persistent problem of finding financial information on privately held companies and lists several excellent sources to help solve the problem.

Lavin is assistant head of the Business and Labor Department at the Buffalo and Erie County Public Library, and his knowledge of his topic is impressive. While not as comprehensive as Lorna Daniells' *Business Information Sources*, Lavin's guide serves researchers as a primer, as well as a bibliography.

The one area of weakness in his coverage, however, is online databases. Special librarians in corporate or finance libraries will prob-

ably find that there is not enough discussion of online sources, which are, in many cases, their mainstay. Lavin lists DIALOG, SDC, and BRS as the "three supermarket vendors" and mentions VuText, NewsNet, LEXIS/NEXIS, and Dow Jones News Retrieval only peripherally, characterizing them as useful to the nonspecialist. The author might be surprised at how many specialists in corporate libraries rely heavily on these full-text sources—particularly in insurance companies, investment banks, and brokerage houses.

This reviewer found some inaccuracies in the listed contents of online databases; for example, DIALOG is credited as the only online supplier of TRINET, when in fact this database is also available on NEXIS. The chapter on marketing information does not include a discussion of the MARS, MAID, or AMI online marketing databases, valuable sources in this field. Since online coverage is the book's only shortcoming, *Business Information: How to Find It, How to Use It* is highly recommended for both public and special libraries.

Jean Fisher
Senior Account Representative
Mead Data Central
New York, New York

Contemporary American Women Sculptors, by Virginia Watson-Jones. Phoenix: Oryx Press, 1986. 704 pp. ISBN 0-89774-139-0. \$125.00

If anyone believes that modern American women have not been highly productive as sculptors, this reference book is apt to alter such an opinion. *Contemporary American Women Sculptors* identifies 328 accomplished sculptural artists who were alive in 1986. Most began receiving public recognition in decades more recent than the 1930s. Artists were selected in proportion to the number of known sculptors residing in each state.

Two facing pages are devoted to each sculptor, and basic arrangement of the volume is alphabetical. The artists submitted their own biographical information. Typical subject divisions of biographical outlines are sculptor's professional name; maiden name; birth date

and place; education; selected exhibitions, public collections, private collections, and awards; and preferred sculpture media. A selected bibliography accompanies most entries. Usually sculptors provide a gallery affiliation, mailing address, and a signed statement of philosophy. A clear black-and-white photograph of one major work by each sculptor is supplied.

Near the end of the volume are two indexes. The geographic index lists artists under 50 states and a few Americans residing outside this country. In the media index, sculptors are listed under materials they have used, such as clay, fiber, welded metal, neon, and hand-made paper.

Watson-Jones based selection on the quality of sculptural works themselves, rather than on artists' school or style. Comparison of *Contemporary American Women Sculptors* with Claude Marks' *World Artists 1950-1980* volume shows that only Louise Bourgeois and Louise Nevelson are in both reference books.

Although Watson-Jones states that the included artists' work "is strong, vital, and often innovative," she could have clarified those general criteria by mentioning design principles that contribute toward achieving the worthy characteristics.

Contemporary American Women Sculptors would be useful in art museums that need to contact collectors for permission to display works of sculpture; in museum libraries, docents would welcome the bibliographies provided. As Watson-Jones states on page x, "By serving as a reference guide and a survey of the artists' accomplishments, this book offers an opportunity to introduce one artist to another and to introduce the public to artists whose work may not be familiar."

This reference book should be accessible in art sections of large public libraries. Book collections concerning the achievements of women would also be incomplete without *Contemporary American Women Sculptors*.

Firms that promote interior decoration and landscape planning could use this volume in order to suggest sculpture that would enhance patrons' surroundings.

Art libraries in colleges and universities where art history courses are taught would benefit from this reference book. Special libraries in institutions that feature studio classes could use the book to introduce students to sculptural opportunities. Studio class members would gain inspiration from this useful volume, as well as from artist Elizabeth Yanish's comment (page 649): "Art offers the possibility of contributing an important rec-

ord of the human spirit and greater personal freedom than is available in many other occupations."

Carl H. and Arlyle Mansfield Losse
Milwaukee, Wisconsin

Information Sources in the Life Sciences, 3rd edition, edited by H. V. Wyatt. (Butterworths Guides to Information Sources Series), Boston: Butterworths, 1987. 191 pp. ISBN 0-408-11472-X. \$84.95.

The aim of this series of guides is to bring a great variety of sources and channels together in a single convenient form and to present a picture of the international scene in each of the disciplines already covered (over a dozen) and those to be covered. This particular unit is actually a revision of the 2nd edition (1971) of *Use of Biological Literature*. In this reworking, it has now become a true guide, rather than a compendium, and is thus quite useful. Note that as far as possible, the chapter authors—all British, incidentally—only cite recent books. Though this literature is chosen on a worldwide basis, there is a slight, but not unfortunate or unpleasant, British bias.

There are 13 chapters, but only 8 deal with specific subjects: biochemical sciences, microbiology (including mycology, virology, tissue culture, immunology, and use of animals), biotechnology, genetics, zoology, ecology, botany, and history of biology. Five essays precede all this by covering areas that prepare the reader or user for the more specific literature to follow. These are in fact as equally instructive and indeed eye-opening as the detailed subjects. One of the essays is the "introduction," which, for example, is often omitted by readers in the use of source tools, but this one provides an education in itself: how to find an "expert" to help the researcher, the role of "standards," how to "search," and the like. Even the appropriate subject libraries themselves are described and evaluated. According to the introduction's author, "Britain probably has the most integrated library service for the life sciences in the world."

Other preliminary areas covered (chapters 1-5) are current awareness, literature searching by computer, secondary sources (abstracts, indexes, and bibliographies), data-banks (plus cell, culture, germplasma, and stock collections; herbaria and museum collections), and guides to the literature. Patents (in general for the life sciences) are covered

in this latter chapter, but only seriously for the United Kingdom. The fact that the research libraries of the New York Public Library have all U.S. patents and a great bulk of those available worldwide is, unfortunately, not mentioned.

Each subject chapter (6–13) also contains an essay on different aspects of searching (in that subject), as well as a thorough guide to the related literature. Although a number of subject chapters (such as botanical taxonomy) found in the 2d edition are omitted in this revision, an important new chapter has been added: biotechnology. This is a term for a group of subjects rather than a single coherent discipline, and there is at present (1987) no general acceptance of what it should cover. There is actually very little literature available, but the author of this chapter certainly milks dry what is available in his excellent, exhaustive report, although he refers to it as cursory. He also gives strong attention to national and international government activity and to health and safety. Business information sources are not ignored and, again, the patent scene is stressed. Sorry to say, the subject index is not only lean but somewhat inconvenient and confusing to use due, for example, to the lack of abbreviation spell-out cross-references.

This excellent reference tool is not only recommended for academic, industrial, and governmental libraries, but as a personal purchase (though a bit steep in price) for researchers.

Robert G. Krupp
Maplewood, New Jersey

Library Boss: Thoughts on Library Personnel, by Robert S. Alvarez, Ph.D., San Francisco: Administrator's Digest Press, 1987. 318 pp. ISBN 0-961-8247-0-0. \$19.95 + \$1.00 shipping (\$14.95 + \$1.00 for individuals).

Special librarians are probably more aware than most of the slew of business management books on the market today. Perhaps you've even applied some of their slick, high-powered theories to your library situation...and come up short. After all, library administration still has unique functions and demands that aren't addressed in profit-centered or theoretical management works. If you've read about "one-minute" "excellence" too many times, the perfect antidote is the pragmatic, grass-roots wisdom of Robert Alvarez.

Library Boss contains Alvarez' opinions and musings gleaned from a successful career in the business sector and public libraries. The short, chatty pieces, formerly published in the author's newsletter *Library Administrators Digest*, are arranged loosely by topic and cover many subjects, including staff selection and training, library board relationships, shared administrators, volunteers, even retirement. Alvarez stresses undeniably important things, such as the need for bosses to give constant feedback to employees; the importance of an enthusiastic, creative staff; the effectiveness of promotion. There are also opinions many will challenge, as Alvarez considers circulation as the "best single measure" of library service, questions the sanctity of affirmative action, and pulls strongly for the clerks in the old "MLS-vs-Technicians" debate. Unfortunately, the book suffers when he gets preachy ("I hope that you believe in neatness, and will pick up litter . . .") or when he refers to pieces from the newsletter not included in this volume.

Overall, Alvarez gives a good pep talk for a return-to-basics library management philosophy that is people- and service-oriented. Although many pages are devoted to public library work, about half the book, including thoughtful chapters on "Welcoming New Ideas" and "Quality of Service," can provide ideas and lively supplemental reading for the special library manager inclined toward a common-sense, humanistic management style.

Catherine Suyak Alloway
Public Services Librarian
Harris-Stowe State College Library
St. Louis, Missouri

Library Jobs: How to Fill Them, How to Find Them, by Barbara I. Dewey. Phoenix: Oryx Press, 1987, 171 pp. ISBN 0-89774-300-8. \$26.50.

Library Jobs: How to Fill Them, How to Find Them is a guidebook for both libraries and librarians seeking to fill or find professional library positions. The author is the admissions and placement director at Indiana University School of Library and Information Science.

As a librarian who has both applied for jobs and interviewed librarians for jobs, my initial question in reading the book was how well it would succeed in addressing the different concerns of employer and applicant. It does succeed quite well.

The author discusses the literature, the law, and current employment practices and makes recommendations on additional or different hiring practices to guide employer and applicant to a successful job match. She takes the reader through the following steps: Job Opportunities and Education for Librarians (chapter 1), The Job Description (chapter 2), Legal Requirements and Job Advertising (chapter 3), Writing and Analyzing Resumes and Cover Letters (chapter 4), The Personal Interview (chapter 5), The Job Offer (chapter 6), Organizational Entry and Job Satisfaction (chapter 7), and Career Assessment and Advanced Placement (chapter 8). Her concern does not end with the acceptance of a job offer, but continues through the training, satisfaction, and continuing education of the newly hired librarian. She also discusses the placement and job satisfaction of experienced librarians, particularly library managers.

The author continually stresses that the entire hiring process should be a result of careful planning. It should be consistent with the employer's goals and result from a personnel policy designed to execute those goals. Applicable federal court cases, statutes, and regulations are discussed as they relate to the hiring process. The author also points out how a well-planned and executed job search can serve as an effective public relations tool for the library.

The book also addresses the concerns of the job-seeker, and demonstrates how the applicant should plan and execute a job campaign to best identify jobs and demonstrate how his/her skills and experience will benefit the employer. The last chapter focuses on the career plan of the librarian, including career plateauing, mobility, motivation, salary considerations, and strategies for advanced placement.

Sample resumes, cover letters, job descriptions, and job announcements provide detailed and practical applications of the author's suggestions. The book does not concentrate on any particular kind of library exclusively; sample documents and discussions of the literature cover various kinds of libraries. The author also discusses policies and activities of various kinds of library associations (American Association of Law Libraries, American Library Association, Medical Libraries Association, Special Libraries Association). The book is well documented and the index is well done.

There are some flaws in the book. Basically, it could have been edited better. This reviewer noted several instances of lack of subject/

verb agreement ("continuing education and professional development *is* essential. . ." (p. 17), "the use of search-and-screen committees *are* becoming more common" (p. 61), "what effect *does* the rank and status of a position have on the job offer. . ." (p. 109)). The words "verbal" and "disinterest" were used when "oral" and "lack of interest" were intended ("... *disinterest* in managerial positions by many librarians" (p. 131), "each library needs to go through a conscious process of defining its own set of. . . policies in writing instead of depending on its *verbal* tradition" (p. 21)). The discussion of federal law is useful, but in some instances is imprecise, redundant, or wrong ("all libraries may not be within the jurisdiction of these *laws, regulations and statutes*" (p. 45), "the *concept* of equal opportunity in hiring is now *legally mandated* and *supervised by law*" (p. 41)). ERISA is incorrectly called the Employment Retirement Income Security Act instead of the Employee Retirement Income Security Act, (p. 105); the plaintiffs in one case are referred to as defendants, (p. 102). This reviewer also thought some discussion of the role of the personnel department would have been helpful. In some institutions (academic libraries, for example), the applicant must go through the personnel department rather than dealing directly with the hiring department at the outset.

Aside from these minor flaws, the book is a substantive, practical, and current discussion of the professional librarian hiring process as it relates to both employer and job-applicant in various types of libraries.

Elyse H. Fox, JD, MLS

Law Library Consultant

Legal Information Services

Newton Highlands, Massachusetts

Libraries in Prisons: A Blending of Institutions, by William J. Coyle. (New Directions in Information Management Series, Number 15), New York: Greenwood Press, 1987. 141 pp. ISBN 0-313-24769-2. \$29.95.

Libraries in Prisons is an interesting, well documented discussion about rehabilitating the inmate through the use of prison libraries. Coyle studies the purpose of the prison library and explains why it should be compatible with the mission of adult correctional institutions. To accomplish this goal, he expresses a need for more standards within the prison library in adult minimum, medium, and maximum security institutions.

Through the history of the prison library, he demonstrates how the purpose of prison libraries has changed, making it difficult for standards to be created for libraries in correctional institutions. He also explains why prison libraries should not operate according to the guidelines of the public library. Prison libraries have used the public library as a model to define its purpose and to develop its policies and operational procedures. Although these prison libraries "may even flourish, by some standards, . . . they are not likely to result in meaningful programs of positive and constructive change" (p. 86) according to Coyle. Therefore, Coyle created a change-based model, which seeks to rehabilitate or, by some manner, bring about an internal change in the criminals' willingness to conduct crime. Hence, it will reduce recidivism, which will help correctional institutional authorities.

The change-based library is independent from other institutional programs, but not from the institution or agency hierarchy. It is to be used by inmates on a completely voluntary basis with arrangements guaranteeing

reasonable access. Coyle describes the services and procedures necessary to help correct inmates' criminal behavior. And, he recommends that librarians be responsible for implementing policies and providing direct and indirect assistance to users. Finally, he emphasizes the fact that the library should be limited to educational and change-based services and that "that principle should not be bent or compromised to satisfy managerial objectives" (p. 100).

This is an interesting and informative look at the prison library and the adult correctional institution. It suggests a practical way for the parties involved to work together for the benefit of the inmates. This book is recommended to librarians and officials in penal institutions who want to use the prison library as a correctional tool for inmates' rehabilitation.

Arena L. Stevens
Reference Librarian
Indiana University
Northwest Library
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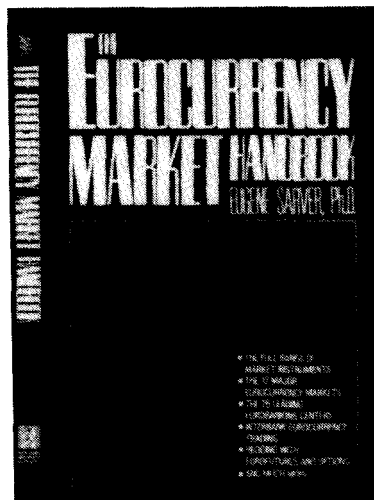
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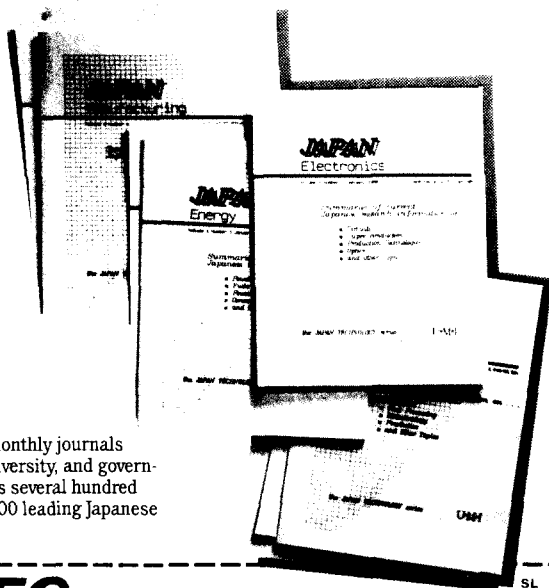


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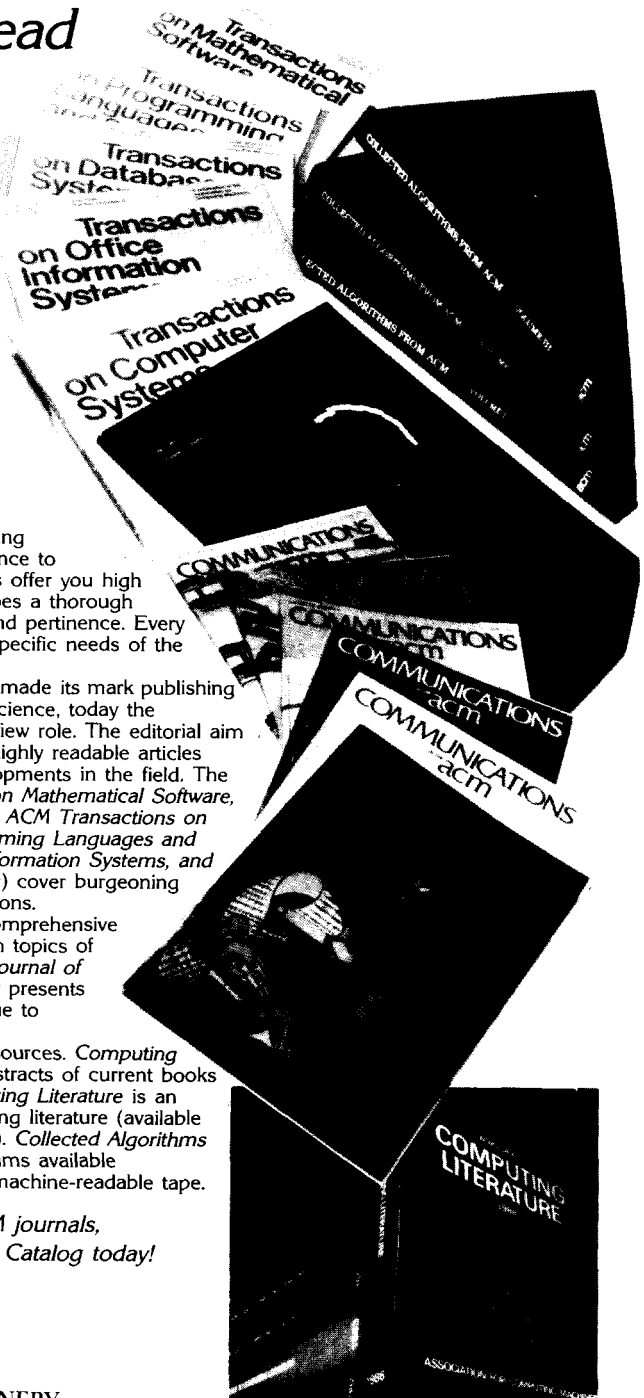
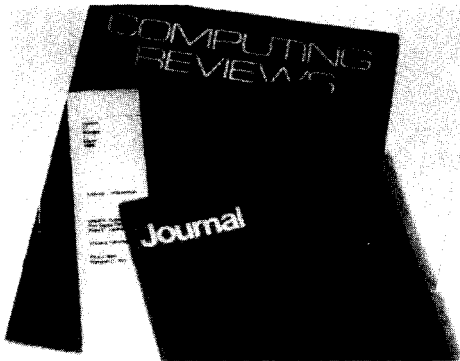
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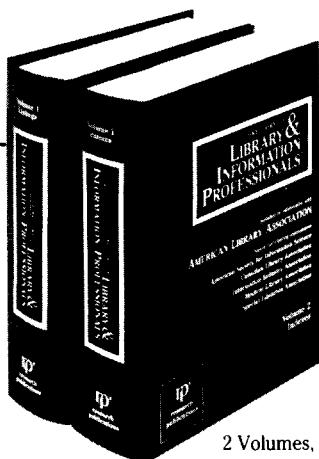
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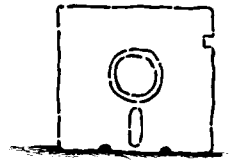


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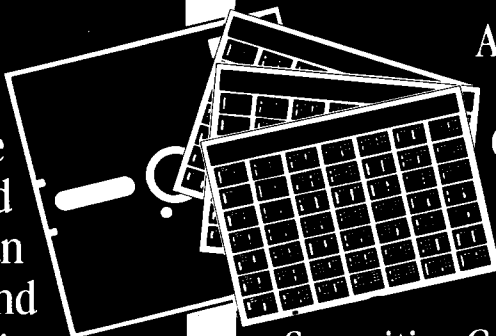
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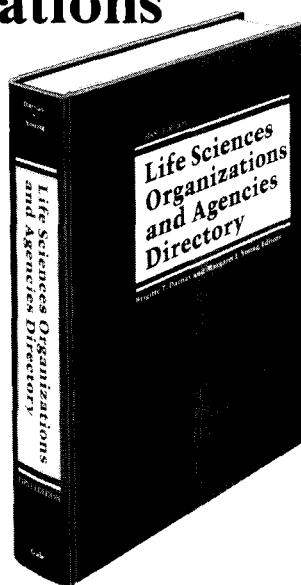
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